



## Evidence-Based Management:

*Trust the Evidence, Not Your Instincts*

Course Syllabus  
Spring 2018

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## **COURSE CONTEXT**

Over the past decade the responsibilities of MPA graduates have changed significantly: now they are often invited to take a seat at the executive table and participate in solving complex organizational problems. At the same time, most traditional models and new 'cutting edge' solutions, such as Lean, Agile, Talent Management, and Diversity Management often fail to deliver on what they promise. This leaves future management professionals with a profound challenge: how can we stay away from fads and quick fixes and instead use reliable evidence to support decision-making? In response to this problem the idea of evidence-based management has evolved, with the goal of improving the quality of decision making by using critically evaluated evidence from multiple sources, such as organizational data, professional judgment, and the scientific research literature. While this sounds sensible and straightforward, gathering, understanding and using evidence is challenging in many ways and requires a set of specific skills. While there are many courses aimed at developing such skills in medicine and related fields, there are relatively few aimed at students or practitioners in schools of public policy and administration. This course will develop your evidence-based skills and enhance your understanding of how an evidence-based approach can be used to support organizational decision-making and management practice.

## **COURSE DESIGN**

This course uses a blended learning approach that integrates traditional classroom sessions that can be attended in person and e-learning modules that can be completed online. In addition, this course takes a problem-based approach: starting point are the practical issues (problems/opportunities) typically encountered by practitioners rather than the body of knowledge produced by academics.

## **COURSE INTRODUCTION**

The specific skills this course aims to develop are: (1) critical thinking and reasoning; (2) identifying and gathering of the best available evidence; (3) critical appraisal of evidence; and, (4) applying evidence of different forms to decision-making. In the process of developing these skills the focus will be on evidence from scientific research. These are examples of the types of questions that will be addressed:

- What is evidence-based decision-making?
- Why do we need it?
- What are decisions in the domain of management and public policy currently based on?
- What do we mean by evidence?
- How can evidence be gathered and critically appraised?
- How can the trustworthiness of evidence be assessed?
- What does evidence-based decision-making look like in practice?
- How can leaders and policy-makers make decisions in a more evidence-based way?

By the end of the course you should be able provide considered answers to all these questions and more.

## **AIMS**

The Course aims to:

- Introduce the concept of evidence-based practice and decision-making
- Assess how decisions in the domain of management, leadership and public policy are currently made.
- Demonstrate how issues (problems/opportunities) can be approached from an evidence-based perspective
- Demonstrate how the trustworthiness of evidence from scientific research can be assessed.
- Give hands-on experience of what evidence-based decision-making entails
- Provide the opportunity to conduct a Critically Appraised Topic (CAT) focused on a practical issue (problem/opportunity).

## **LEARNING OUTCOMES**

On completion of this course, students should be able to:

- Assess the strengths and weaknesses and costs and benefits of evidence-based decision-making.
- Assess the extent to which claims (made by managers, leaders or policy-makers) are supported by evidence
- Distinguish evidence from opinion, probability from certainty, and theory from dogma
- Conduct a CAT to inform decision-making

## **COURSE MATERIALS**

There is no set course book but many articles on evidence-based decision-making and related topics will be discussed. All articles (and video's) will be provided through the CEBMa website ([www.cebma.org/resources-and-tools/student-resources/](http://www.cebma.org/resources-and-tools/student-resources/)) or NYU website. Other relevant materials for the lectures are described below. Please note that you will be expected also to do your own research to identify relevant materials.

## **RELATION WITH OTHER COURSES**

This course has some useful overlap with key concepts and principles from other courses. In particular, students will be familiar with sources of cognitive and social bias in management and policy decision-making (introduced in Managing Public Service Organizations and Microeconomics for Public Management). Similarly, they will have skills in assessing the reliability and validity of research from Statistical Methods for Public, Non-profit, and Health Management. Students also will be familiar with threats to evidence-based decision-making that stem from power and politics from other required courses (Introduction to Public Policy; Strategic Management). The proposed course will extend concepts and principles from these courses and, build students' ability to move from understanding threats to evidence-based decision-making to improving their skills to do so.

## OVERVIEW OF TEACHING SESSIONS

<i>Date</i>	<i>Session</i>	<i>Form</i>	<i>Duration</i>	<i>Topic</i>
<b>Pre-course</b>	1	E-learning	100 min	Evidence-based decision-making, the basic principles
<b>Feb 23<sup>rd</sup></b> (Friday) 09:00 – 17:00	2	Workshop	100 min	Evidence-based decision-making: the basic principles
	3 & 4	Lecture & Workshop	100 min	Asking critical questions
	5	Workshop	100 min	How to critically appraise professional experience and judgment
-	6	E-learning	120 min	How to search for evidence in research databases
<b>Feb 28 &amp; March 1</b> (optional) 19:00 – 21:00	-	Walk-in hours (optional): individual coaching and support		
<b>March 2<sup>nd</sup></b> (Friday) 09:00 – 12:00	7	Lecture	100 min	How to determine the ‘best available’ evidence
	8	Lecture	50 min	Aspects of scientific research
-	9 & 10	E-learning	250 min	Methodological appropriateness and quality - Evaluating scientific studies
<b>March 9<sup>th</sup></b> (Friday) 13:00 – 17:00	11	Lecture	50 min	CATs, REAs and systematic reviews
	12	Workshop	50 min	Conducting CATs
	-	Self-study: Individual research on your CAT		
<b>Mar 15,16, 19 &amp; 20</b> (optional)	-	Walk-in hours (optional): individual coaching and support		
<b>Mar 23<sup>rd</sup></b> (Friday) 09:00 – 14:00	14	Presentation	200 min	Presentation of your CAT
	15	Evaluation	50 min	Integrating the outcome of a CAT into the decision-making process, evaluation of the course.
To be determined	-	Post course session: individual coaching and support		

**Session 1****E-Learning: Evidence-based decision-making, the basic principles**

Description	What is evidence-based decision-making? What counts as evidence? Why do we need evidence-based practice? What sources of evidence should be taken into account? Why focus on 'the best available' evidence? Common misconceptions of evidence-based decision-making? What is the evidence for evidence-based practice?
Instruction 1	Before you start the online module, please think about your answers to the following questions: <ul style="list-style-type: none"> <li>• Think about the last time you made a decision as a consumer (e.g., buying a new laptop, choosing a restaurant, purchasing a new TV). How did your decision-making process look like? What evidence did you use?</li> <li>• Think about a management, business or policy decision you have been involved in making (or have observed closely). How did the decision-making process look like? What evidence was available?</li> </ul>
Instruction 2	Go to the Open Learning Initiative (OLI) website: <a href="https://oli.cmu.edu/">https://oli.cmu.edu/</a> in the upper right hand corner of the site, click "Sign Up" and fill out the form. You will receive further instructions via email.
Required pre-session reading	None
<b>Assignment 1</b>	After completing the module, take the quiz

**Session 2 - Feb 23<sup>rd</sup>****Workshop: Evidence-based decision-making, the basic principles**

Description	How do we make decisions? How do managers, leaders and policy makers typically make decisions? Where did evidence-based decision-making come from? What are the limitations of evidence-based practice?
Instruction	Bring a popular management book (or buy one at the bookstore), and answer the following questions <ul style="list-style-type: none"> <li>• What types of sources are cited?</li> <li>• Approximately what proportion of sources appears to be <ul style="list-style-type: none"> <li>- personal or anecdotal</li> <li>- based on so-called "best-practices" of other companies</li> <li>- based on other business books or publications</li> <li>- scientific evidence? (check 3 citations in Google Scholar)</li> </ul> </li> <li>• What is known about the author? (check Google and Google Scholar)</li> <li>• What is known about the proposed model / principles? (ditto)</li> <li>• Is the model/ principle generalizable to all types of organizations?</li> <li>• Does the book appear useful (explain why)?</li> </ul>
Required and/or recommended pre-session reading	See <a href="#">CEBMA website</a> : Introduction

**Session 3 & 4: - Feb 23<sup>rd</sup> Lecture and workshop: Asking Questions**

Description	Why asking critical questions? Solutions in search for a problem. Surfacing assumptions. What is a causal mechanism? Formulating an answerable question. Formulating a searchable question: PICOC.
Instruction 1	<p>Think about a management, business or policy decision you have been involved in making (or have observed closely). This decision should be one which:</p> <ul style="list-style-type: none"> <li>• Was reasonably important</li> <li>• Involved spending significant resources</li> <li>• Involved several or more people</li> <li>• Was made over a period of time (ie. weeks or months)</li> </ul> <p>Ask yourself these questions and write down the responses – make them as detailed as possible:</p> <ul style="list-style-type: none"> <li>• What exactly was the problem (or opportunity)?</li> <li>• How many alternative decision options were considered?</li> <li>• How much evidence was used, and from which sources (scientific, organizational, experience, crystal ball?)</li> <li>• Was any attempt made to explicitly evaluate its quality or trustworthiness?</li> </ul>
Instruction 2	<ul style="list-style-type: none"> <li>• Bring along a policy paper, project proposal, strategy document or change plan from an organization</li> <li>• Read the paper and underline all assumptions.</li> <li>• Determine the three most questionable or critical assumptions.</li> <li>• Make a suggestion on how these assumptions could be substantiated.</li> </ul> <p>If you don't have (or are not able to acquire) a policy paper, project proposal, strategy document or change plan the course leader will provide you one.</p>
Required and/or recommended pre-session reading	See <a href="#">CEBMA website</a> : Asking questions

**Session 5: - Feb 23<sup>rd</sup> Lecture: Professional experience and judgment**

Description	Why are the insights and expertise of experienced professionals is an important source of knowledge? What are the boundaries of human rationality? What are cognitive biases? What are the most common biases? How can you use experiential evidence with due regard for the role played by cognitive biases?
Required and/or recommended pre-session reading	See <a href="#">CEBMA website</a> : Evidence from practitioners

**Session 6: E-Learning: Searching for scientific studies**

Description	Literature reviews. Peer reviewed journals. Types of research databases. Search strategies: shotgun, snowball and building blocks. Managing the scientific evidence found. Let the evidence find you!
Instruction	Go to the Open Learning Initiative (OLI) website: <a href="https://oli.cmu.edu/">https://oli.cmu.edu/</a> in the upper right hand corner of the site, click "Sign Up" and fill out the form. You will receive further instructions via email.
Required and/or recommended pre-session reading	None
<b>Assignment 2 (group)</b>	<p>Conduct a CAT (on a topic provided during the session) and make a <b>maximum five-minute presentation (strictly timed)</b> covering the following topics:</p> <ul style="list-style-type: none"> <li>• What search strategy was used and why?</li> <li>• What types of study were considered relevant and why?</li> <li>• What are the findings?</li> </ul> <p>The CAT's will be presented during session 7</p>

**Walk-in hours: Feb 28 & March 1**

Description	This is an opportunity for you to receive individual coaching and support on how to write a literature review, how to search for scientific studies in research databases, asking critical questions, avoiding common biases, etc.
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**Session 7: March 2<sup>nd</sup> Lecture: Best available evidence**

Description	What is pseudoscience? What is methodological appropriateness? What is internal validity? What's the difference between correlation and causality? What is bias? What is confounding? What are the levels of internal validity? What is external validity?
Instructions	<p>Think about the last time you were involved in a change-intervention And consider your answers to the following questions:</p> <ul style="list-style-type: none"> <li>• Did the intervention have an effect?</li> <li>• How do you know?</li> </ul> <p>How can you be certain that intervention A leads to outcome B?</p>
Required and/or recommended pre-session reading	See <a href="#">CEBMA website</a> : Best available evidence

**Session 8: March 2<sup>nd</sup> Lecture: Evidence from scientific research**

Description	What is a research design? What types of research designs are there? What are the basic elements of a research design? What is randomization? What is a control group? What are effect sizes? What is a confidence interval and why do we need it? How to determine the research design? How to determine a study's methodological quality? What are standard appraisal questions?
Required and/or recommended pre-session reading	See <a href="#">CEBMa website</a> : Evidence from scientific research

**Session 9 E-learning: Appraisal of scientific evidence**

Description	Putting it all together: Methodological appropriateness; Methodological quality; Grading the level of trustworthiness; How to read an academic article.
Instructions	You will receive instructions via email.
Required and/or recommended pre-session reading	None

**Session 10 E-learning: Evaluating scientific studies**

Description	Evaluating scientific studies: research appropriateness, research quality, overall trustworthiness
Instructions	You will receive instructions via email.
<b>Assignment 3</b>	Critically appraise the four LBD-1 studies
<b>Assignment 4</b>	Critically appraise the three LBD-2 studies
<b>Assignment 5</b>	Critically appraise the two DIGT studies
Required and/or recommended pre-session reading	None
<b>Exam</b>	After completing the module, take the online exam (quiz).



**Session 11: March 9<sup>th</sup> Lecture: CATs, REAs and systematic reviews**

Description	What are CATs, REAs and systematic reviews? Where did they originate? What are the differences between CAT's, REA's and systematic reviews? What is their added value for managers, leaders or policy makers? What are the main steps involved in doing a REA and systematic review?
Required and/or recommended pre-session reading	See <a href="#">CEBMA website</a> : CATs, REAs and SRs

**Session 12: March 9<sup>th</sup> Workshop: Conducting CAT's**

Description	How do you conduct CATs? What are the key stages? How to identify a review question? What are appropriate search strategies? What information should be extracted for each study? What are some of the ways findings can be synthesized? How should the findings be reported?
Instructions	<ul style="list-style-type: none"> <li>• Start to think about the CAT questions you are interested in addressing.</li> <li>• Write down these questions.</li> <li>• For each, describe why this question is important in practical terms.</li> <li>• Can you refine the questions to make them more specific and more answerable?</li> </ul> <p>What are the blocks or barriers (if any) to developing your CAT question(s).</p>
Required and/or recommended pre-session reading	<ul style="list-style-type: none"> <li>• The CEBMA guideline for conducting CATs</li> </ul>
<b>CAT Report</b>	Conduct a CAT on a topic relevant to management practice and present your findings in a report. More detailed instructions will be provided in class along with examples of CATs. You will be required to submit your CAT question and an outline of your report for formative assessment some weeks before the final deadline. See also 'CAT Report' below.

**Self-study: March 9<sup>th</sup> Individual research on your CAT (support and advice available)**

Description	This is an opportunity for you to work on your CAT. Please bring your laptop so you can do searches online and also bring any questions and queries you have about how you can progress your review. The course leader will be present throughout to help.
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**Walk-in hours: March 15, 16, 19, or 20**

Description	This is an opportunity for you to receive individual support on your CAT.
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**Session 14: March 23<sup>rd</sup> Presentation of your CAT**

Description	Each student will be required to give presentation covering the following topics: <ul style="list-style-type: none"><li>• Background to the CAT question. How was it chosen? Why?</li><li>• What is the question?</li><li>• What types of study were considered relevant and why?</li><li>• What search strategy was used and why?</li><li>• What are the results?</li></ul>
<b>Assignment 6</b>	Prepare a ten-minute presentation (strictly timed) addressing the above topics. Email your presentation to xxx before 12:00 midday on xxx

**Session 15: March 23<sup>rd</sup> Evaluation**

Description	Evaluation of the outcome of the CATs. Integrating its outcome into the decision-making process. Evaluation of the course.
<b>Assignment 7</b>	Please consider your answers to the following questions: <ul style="list-style-type: none"><li>• What results came out of your CAT?</li><li>• Are you surprised or is it what you expected?</li><li>• How could you use these results to (help) make a decision?</li><li>• How could this course be improved?</li><li>• What did you like? What didn't you like?</li><li>• What was missing?</li></ul> Email your answers to xxx before 12:00 midday on xxx

**COURSE ASSESSMENT**

The course is assessed in four ways:

1. Class participation (including the two e-learning modules) > 15%
2. Completion of the 7 assignments > 15%
3. Online exam > 30%
4. CAT report (assignment 4 and 5) > 40%

## **CAT REPORT**

The course is partly assessed largely through a report of the results of a Critically Appraised Topic (CAT) you will conduct. Although this is an individual piece of work you are strongly advised to discuss each other's CATs as you plan and conduct them in order to check that your approach and method make sense to other people (because you will learn a lot about the doing CATs through trying to provide advice to others).

More detailed instructions will be provided in class along with examples of CATs. You will be required to submit your CAT question and an outline of your review for formative assessment some weeks before the final deadline.

The basic structure of the report should broadly be as follows:

### *Background*

- Background and context
- Rationale for the CAT

### *Objectives*

- Statement of the CAT's primary objective
- Statement of main question to be answered

### *Criteria for considering studies for this CAT*

- Type of population
- Type of intervention
- Type of outcome(s)
- Type of context
- Type of studies

### *Search strategy for identification of studies*

- What databases and sources were searched?
- What time period?
- What search terms and key words were used?
- What search strategy was used?

### *Inclusion criteria*

- What are inclusion/exclusion criteria for studies?

### *Assessment of methodological quality*

- What instrument or scale or criteria was used to determine the level of trustworthiness?

### *Results and conclusion*

- Based on the evidence reviewed, what is the answer to the review question?
- How much confidence can we have in the answer?
- What do we know in relation to the review question?
- What do we not know?
- Based on the evidence found, what would be your recommendation?

### The assessment criteria for the CAT report

	Indicative marking	
	Fail / Margin / Good / V Good / Dist	
Extremely unclear, unfocused and in principle unanswerable review question(s) and review objective(s).		Extremely clear, focused and in principle answerable review question(s) and review objective(s).
No framework such as PICOC used to focus the review question		Framework such as PICOC used to focus the review question.
No explicit search strategy described and an explanation of how it is appropriate to the review question not provided.		An explicit search strategy described and an explanation of how it is appropriate to the review question provided.
No clear and explicit criteria appropriate to the review question used to systematically include and exclude studies.		Clear criteria and explicit appropriate to the review question used to systematically include and exclude studies.
No clear and explicit criteria appropriate to the review question used to systematically assess study quality.		Clear and explicit criteria appropriate to the review question used to systematically assess study quality.
Insufficient details presented for each of the studies included.		Sufficient details presented for each of the studies included.
Conclusions do not accurately reflect what is known and not known in relation to the review question.		Conclusions accurately reflect what is known and not known in relation to the review question.