

# Managing Uncertainty in Innovative Projects with Info-Gap

A ONE WEEK, INTENSIVE COURSE

## The Instructors

This course was developed and is taught by Professor Yakov Ben-Haim and Dr. Wendell Iverson.



### Professor Yakov Ben-Haim

Professor Ben-Haim is the "Father" of Info-Gap Decision Theory. Info-Gap is a quantitative methodology for modelling and managing severe uncertainty that is applied in project management, engineering design, monetary policy, biological conservation and medical diagnosis. Prof. Ben-Haim has lectured at universities, medical and technological research institutions and central banks throughout the world and has been a visiting scholar in ten different countries.

He has published four books and more than seventy articles. He holds the Yitzhak Moda'i Chair in Technology and Economics at the Technion – Israel Institute of Technology. Professor Ben-Haim has a B.A. from Beloit College and both a M.Sc. and a Ph.D. from the University of California Berkeley. His e-mail address is [yakov@technion.ac.il](mailto:yakov@technion.ac.il).



### Dr. Wendell Iverson

Dr. Iverson is the founder and principal consultant of LeapFrog R&D, a consulting company that specialises in the management of innovation. Previously, he was head of R&D at Heineken for ten years. He has more than twenty-five years of experience in the food, beverage and fermentation industries and has managed a wide range of innovative R&D projects. Having lived and worked in four different continents, he brings a global perspective to this course. Dr. Iverson has a B.Sc.

from MIT, a Ph.D. from the University of Melbourne and both a M.Sc. in Technology Management and an MBA from Washington University in St. Louis. His e-mail address is [wiverson@leapfrogrd.com](mailto:wiverson@leapfrogrd.com).

Are your innovative projects  
**BEHIND SCHEDULE,**  
over budget or under performing?

Do you struggle to  
**ALLOCATE LIMITED RESOURCES**  
among different project tasks?

Would you like **BETTER TOOLS**  
for managing the uncertainty in your projects?

If you or your company would like  
answers to questions like these questions,  
**THIS COURSE IS FOR YOU.**

A copy of the course syllabus can be obtained at:  
<http://www.technion.ac.il/yakov>

For more information or questions, please e-mail  
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## Introduction

Innovation is increasingly important in order for companies and economies to grow and prosper. Innovative projects, by their very nature, contain significant uncertainties. Managing these uncertainties is not straightforward and too often innovative projects experience major time delays, significant cost overruns and disappointing results. Few project managers have adequate training in managing the large uncertainties of innovative projects. In addition, the traditional tools and techniques for managing these uncertainties have fundamental limitations.

## Info-Gap

Info-Gap Decision Theory is a unique and emerging methodology for making robust decisions in the face of significant uncertainties. Developed by Professor Yakov Ben-Haim of the Technion-Israel Institute of Technology, Info-Gap is a quantitative methodology for dealing with significant uncertainty. In addition to managing innovative projects, Info-Gap is being applied in a wide range of other decision processes with high uncertainty, including biological conservation, engineering design, monetary policy and medical diagnosis. More information on Info-Gap can be found at <http://www.technion.ac.il/yakov>.

## The Participants

This course is intended for project managers and decision makers who recognize the importance of severe uncertainty. The participants should have five or more years of experience with project management. Familiarity with common project management practices, such as work breakdown structure, project scheduling and estimating times and costs is assumed. Info-Gap begins with qualitative, verbal descriptions but quickly moves to quantitative, mathematical formulations. In order to carry out Info-Gap calculations, *it is essential that participants understand university mathematics, including introductory calculus and probability and have computer programming skills, MatLab or Excel*. The language of instruction is English and each participant should bring a laptop computer to facilitate the calculations.

*This is an intensive course, so participants must have the willingness and ability to learn new concepts and mathematical tools. The number of participants in each course is strictly limited to 12 people.*

## The Course

This hands-on course, a balance of lectures, examples and exercises, emphasises learning by doing. After the basic Info-Gap methodology is understood, each participant works in a small group of 2 to 4 people on an Info-Gap analysis of their choice. Participants are encouraged to select a project related to their work. Upon successful completion of this course, each participant will be able to:

- **Understand and explain the limitations of current project management techniques for managing innovative projects**
- **Understand and explain basic Info-Gap concepts of uncertainty, satisficing, robustness and opportuneness**
- **Translate qualitative, verbal descriptions of project objectives and decisions into quantitative, mathematical Info-Gap models which contain 3 components:**
  - **The system model**
  - **The performance requirements**
  - **The uncertainty model**
- **Formulate and solve algebraic expressions for robustness and opportuneness functions for project time, cost and performance**
- **Apply the robustness and opportuneness functions when making decisions during project planning and execution**

## The Cost

The cost of this one week course is €2,500 per participant. This fee includes all course materials, including a copy of Professor Ben-Haim's recent book, *Info-Gap Decision Theory: Decisions under Severe Uncertainty*, 2nd edition and copies of all lecture materials, examples and exercises. Also included in the course fee are coffee and tea, the daily lunches, refreshments at the welcome get-together and the course dinner. All other costs, including travel, accommodation and meals other than those mentioned above, are the responsibility of the participant.