The PHM Society offers this updated *two-day intensive short course* titled **PHM Fundamentals and Case Studies— From Monitoring/Sensing to Fault Diagnosis/Failure Prognosis and Case Studies,** on PHM tools, methods, applications and case studies on **October 1 and 2** in **Denver USA** right before the PHM16 conference**.** This follows from the first offering at the PHM14 conference in Fort Worth, TX with 48 attendees and ratings of 4/5. It was also run in 2015 in San Diego and 2016 in Bilbao, Spain.

The course is presented by recognized experts in the PHM field and will cover the current state of the art in PHM technologies, sensors and sensing strategies, data mining tools, CBM+ technologies, novel diagnostic and prognostic algorithms as well as a diverse array of application examples/case studies. It is addressed to engineers, scientists, operations managers, educators, small business principals and system designers interested to learn how these emerging technologies can impact their work environment.

Through a lecture (with Q&A), networking and workshop format with specialist experts, participants will:

1. Describe a baseline for defining the extent and capabilities of PHM, specifically needs and organization
2. Identify specific details of PHM Applications (metrics, sensors, cost benefits, reliability) and PHM Methods (diagnostics, prognostics, data driven methods and uncertainty)
3. Identify issues and needs and a way forward including Continuing Professional Development
4. Examine case studies of PHM applications across diverse domains to identify solutions and impacts
5. Plan a PHM application in a mini workshop setting with expert group leaders

Note: A PHM Society Certificate will be provided for 1.4 Continuing Professional Development Units to each participant completing the course.

Course Leaders: Dr. George Vachtsevanos and Dr. Neil Eklund

Course Administrators: Jeff Bird jeffbird@rogers.com

TIME SLOT	Title	Contents Notes
DAY 1- Saturday October 1		
800 to 825	Welcome & Introductions	All participants
825 to 9	Introduction to PHM	Taxonomy, scope, basics, standards- common for all talks
9 to 945	Deriving Requirements for PHM	Basics and illustrative examples
945 to 1030	PHM Performance Metrics	Basics and illustrative examples
1030 to 1045	*Break - provided*	
1045 to 1130	Diagnostics Methods	Basics and illustrative examples including uncertainty
1130 to 1200	Diagnostics Case Studies	2 case studies supporting diagnosis information
1200 to 100	*LUNCH - provided*	
100 to 145	Prognostics Methods	Basics and illustrative examples including uncertainty
145 to 230	Data Analytics Methods	Basics and illustrative examples including uncertainty
230 to 245	*Break - provided*	
245 to 345	Prognostics Case Studies	2 case studies supporting prognostics and data analytics information
345 to 430	Acquiring Data	Basics and illustrative examples
430 to 500	Analysis Mini Workshop	Small group data design activity with worksheets, participant problems
500 to 515	Discussion of Workshop Results	Each group reports results
700-?	Non-hosted dinner	Networking for all participants
DAY 2- Sunday October 2		
830 to 915	IVHM Technologies	Basics and illustrative examples
915 to 1000	Cost Benefit Analysis	Basics, methods and tools
1000 to 1015	*Break -provided*	

TIME SLOT	Title	Contents Notes
1015 to 1145	Plenary- Issues and Needs	Review period to compile collected issues from all participants
1145 to 1230	*LUNCH- provided with evaluation forms*	
1230 to 200	Fielded Systems Case Studies	3 case studies supporting IVHM and fielded systems information
200 to 215	Case Study Workshop Introduction	
215 to 230	*Break - provided*	
230 to 330	Case Study Mini Workshop	Small group activity builds on data design mini workshop
330 to 400	Way Forward	Issues, resources including Cont. Prof. Dev.
400 to 415	Wrap-up	