MEM IIoT Course Syllabus
Oct 1 – Dec 10, 2018

IoT has an enormous market potential of billions of connected devices generating Trillions in revenues. IoT will change industries and transform the way we work and live. Industrial companies are already pivoting from Products to Services leveraging IoT technologies – this digital transformation is more broadly called the Industrial IoT or Industrial Internet. At the end, these industrial companies will become network-based businesses with connected products and factories. It’s imperative that these companies transform their organizational architecture as they become connected network businesses.

As companies move beyond proof of concepts and pilots into full production and scale, they will have to turn their focus on the people part of the equation, re-skilling and retraining their workforces. This course aims to fulfil this critical gap.

This course is designed as an introductory course to Industrial Internet for anyone working in the industrial sector or planning to embark in a career around IoT.

At the end of the course, you’ll have a strong command of: 1) Industry Dynamics 2) IoT Technology Architecture and 3) IoT Ecosystem.

This 11-Week course will cover the following topics:

1. IIoT Market Size and Potential
2. IIoT Market Segments and Verticals
3. IIoT Use-Cases and Case Studies
4. Business Outcome based IIoT Methodology
5. Economics of IIoT
6. The role of Blockchain and Crypto Platforms
7. Data driven Analytics and Role of AI
8. Importance of Security and Architecture
9. Practical/Lab Exercises
10. Featured Speakers

Teaching Method: A typical class session will be a mix of lectures, practical labs and article/case discussions. In addition, outside speakers will join us and discuss their IoT challenges. Homework will be based on reading assignments and lab work.

Grading: Grades will be based on the reading assignments (40%), completion of labs (30%), final class presentation (20%) and class participation (10%). Grading: Letter (ABCD/NP)
MEM IIoT Schedule and Agenda

Class Session: Mondays, Weekly 1 – 4pm CST.
Location: TBD
Office Hours: By appointment
Dates: Oct 1 – Dec 10, 2018

Session 1 - Introduction to IIoT
- Definition
- Market Size
- Case Studies
- IoT v IIoT
- Practical: Introduction to IoT Kit

Session 2 - Industrial Internet IIoT
- Scope
- History
- Vertical and Business Process areas
- Leading companies
- Importance of building Ecosystems
- IIoT Value Chain – who does what?
- Practical: Exercise #1

Session 3 - Business Outcome based Methodology
- IIoT Methodology
- Solution Architecture
- Data Insights Analytics
- Workforce/Labor Displacement
- Economics of IIoT
- Practical: Exercise #2

Session 4 - Technology - Part 1
- LPWAN and Network
- SW and Cloud
- Security
- Blockchain & Crypto Platforms
- Role of AI & Machine Learning
- Practical: Exercise #3
Session 5 - Technology - Part 2
- Telematics/Transportation
- Smart Cities
- Smart Grid
- Transportation
- Mining
- Others
- Practical: Exercise #4

Session 6 – Blockchain
- Ledger based technologies
- Blockchain use-cases for IoT
- Tokens vs Security vs Utility
- ICO
- Practical: Exercise #5

Session 7 – Team Case Study Discussion #1

Session 8 – Team Case Study Discussion #2

Session 9 – 10 – Speakers and Final Class Presentation