

# Stanford Continuing Studies Program

## BUS174 –The Business of Self-Driving Cars

**Instructor:** Sudha Jamthe, CEO IoT Disruptions & Technology Futurist.

### Preliminary Syllabus: Fall 2017

#### Course Dates:

Tuesdays, 7:00 – 8:50 pm 9 weeks, September 26 – December 5 (No class on Oct 10, November 21)

#### Course Goals:

- Offer an overview of the autonomous vehicle landscape, and its impact on the value chain of other industries with a focus to uncover innovation opportunities for entrepreneurs and corporate innovators.
- Teach a business framework to understand the disruption from autonomous vehicles to create new products and services in new markets or disrupt existing markets with a strategic understanding of evolving business models.
- Provide the student with the opportunity to apply the class learning by building out a business plan and optionally presenting it to a panel of judges for feedback.
- Hear from industry executives, entrepreneurs, regulation leaders and investors to get a clear picture of the business disruption from autonomous vehicles.
- Please note this is a business course and not a technology course. You will get an introduction to the technology behind self-driving cars but the focus will be on business drivers and business model evolutions.

#### Course Summary:

Twenty self-driving cars are being road tested on the highways of the San Francisco Bay Area. Google's self-driving car (Waymo) has completed 2 million miles on city roads. Otto, owned by Uber, has successfully delivered goods on a self-driving truck in Colorado. Tesla is disrupting the automotive space by reaching a market cap of \$51 billion, close to that of GM, partly by adding an auto-pilot autonomous mode to its regular cars. And the top five automakers have promised some form of autonomous vehicle by 2021, the year when revenue from autonomous vehicles is estimated to be \$42 billion globally. We are witnessing a historic moment in car manufacturing and the birth of new business models, new mobility designs, and the transformation of related industries—automotive, transportation, freight, insurance, infrastructure, and others.

This course will teach entrepreneurs and business leaders about the autonomous vehicle

landscape, covering everything from the technology of the self-driving car and artificial intelligence to regulatory and policy issues and how to create value from autonomous-vehicle data. Students will learn a framework for building new businesses in this dynamic space, and for creating new opportunities for their companies. This framework will encompass mobility solutions, product management, design, market development, partnership, and business models. Students will have the option to present a group business plan optionally on the last day of class to a panel of industry experts.

Guest speakers from the autonomous-vehicle industry, transportation companies, and new innovative businesses will augment the class learning. Guest speakers include:

1. German Matchniff (Test Engineer, Tesla)
2. Kyle Columbus (Program Launch Manager for Future Transportation, Mercedes-Benz Research and Development)
3. Oliver Cameron (CEO, Voyage)
4. Umair Akeel (Operating Partner, Bessemer Venture Partner)
5. Chris Ballinger (Toyota Research Institute, CFO & Head of Mobility Services)
6. Jane Ren (CEO and Co-Founder, Atomiton).

## Grade Options and Requirements:

1. Letter Grade (A, B, C, D, No Pass):
  1. Students must attend at least 6 out of 9 class sessions
  2. Attendance 30% & business plan 70%
2. Credit/No Credit (CR/NC):
  1. Students must attend at least 6 out of 9 class sessions
  2. Attendance 30% & business plan project 70%
3. No Grade Requested (NGR): No work required; no credit shall be received; no proof of attendance can be provided.

*\*Please Note: If you require proof that you completed a Continuing Studies course for any reason (for example, employer reimbursement), you must choose either the Letter Grade or Credit/No Credit option. Courses taken for NGR will not appear on official transcripts or grade reports.*

## Week-By-Week Lesson Plan

The first session will start with an introduction to the Business Framework that will be taught throughout the course. Rest of the weeks is divided into three sections covering 1) The Autonomous Vehicle Landscape, 2) Futuristic Design and Business Models and 3) Car Cognition, Car data and Mobility Services. The final class will be an overview of the investment view of the autonomous vehicles landscape followed by class presentations to a panel of venture capitalists.

**Week 1 Sep 26th:** Class Introductions and Self-Driving Car Business Framework

## **Part 1: Landscape - Ecosystem, Technology Shifts, Business Drivers, and Regulation**

**Week 2 Oct 3rd:**

**Topic:** Business Drivers of the Autonomous Vehicle Disruption

**Speaker:** German Matchniff (Tesla Motors)

**Week 3 Oct 17th:**

**Topic:** Technology of self-driving cars and gaps for innovation

**Speaker:** Oliver Cameron (CEO, Voyage)

**Week 4 Oct 24<sup>th</sup>:**

**Topic:** Regulatory and policy issues

## **Part 2: Futuristic Design and B-Models**

**Week 5 Oct 31<sup>st</sup>:**

**Topic:** Ownership and usage impact on design and b-models

**Speaker:** Kyle Columbus (Program Launch Manager for Future Transportation, Mercedes-Benz Research and Development),

**Week 6 Nov 7th:**

**Topic:** Evolving business models and shifting value chains – gaps for innovation, risks, myths and opportunities.

**Speaker:** Chris Ballinger, Toyota Research Institute

## **Part 3: Car Cognition, Car Data and Mobility Services**

**Week 7 Nov 14<sup>th</sup>:**

**Topic:** Car AI & Value from Autonomous Vehicle Data

**Week 8 Nov 28th:**

**Topic:** Mobility Services and Industries Impacted

**Speaker:** Jane Ren, CEO Atomiton

## **Final Class Presentations**

**Week 9 Dec 5<sup>th</sup>**

**Topic:** AV Investment Landscape

Student (opt-in) present to a panel of Venture Capitalists.

**Speaker:** Umair Akeel, Bessemer Venture Partner (More VCs will be added to the panel).

## **Required Textbooks:**

(Required) Sudha Jamthe, *2030 The Driverless World: Business Transformation from Autonomous Vehicles* (Available at the Stanford Bookstore beginning 9/8) (ISBN 978-1973753674).