Creating Human Capital for

India Vision 2020

SAEINDIA automotive SOP

Detailed Report
### Current Situation

Students have very little industry knowledge
Students get a shock when they join industry
Mis-trust between institutions and industry
Industry conduct own induction programs
Institutes also conduct orientation programs

### Reasons

Institutions do not understand industry needs
Industry does not understand curriculum and it has undue expectations
Linkage between theory and practice unclear

### Effect

It takes long time before engineers contribute
Many students leave their first companies in less than two years
Industry unable to plan their human capital leading to slow growth
Profitable growth of the country is affected

### Solution from SAEINDIA

A complement to academic program introducing an effective problem solving process in collaboration with industry

### Expected Benefits

High quality engineers ready to take the challenges of industry
Closer interaction between industry and institutions leading to higher cooperation
Human engine to propel India to 2020 vision
What is the Need of industry?

- Constant change:
  - Products
  - Processes
  - Organization

Consequence

- Problems
  - Technical
  - Resource
  - Culture

The Need

- People capable of solving problems

Industry needs engineers to solve problems effectively
Effective Problem Solving Process

Connecting Domains of Academy and Industry
Three Step Process

1. **Physical Connection**
   - Reverse Engineering

2. **Problem Solving**
   - Vehicle Design, Prototype and Testing

3. **Industry Orientation**
   - Project Perfect
   - Effectiveness tools
<table>
<thead>
<tr>
<th>No</th>
<th>Module</th>
<th>Timing</th>
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<tr>
<td>1</td>
<td>Reverse Engineering - Basic</td>
<td>3 sem vacation</td>
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<tr>
<td>2</td>
<td>Survey Indian Vehicles</td>
<td>4 semester</td>
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<td>3</td>
<td>Reverse Engineering Complete Vehicle</td>
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<td>4</td>
<td>Literature Survey of Power Train Trends</td>
<td>5 semester</td>
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<td>5</td>
<td>Vehicle Concept Definition</td>
<td>5 sem vacation</td>
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<td>6</td>
<td>Sub-System Concept Definition</td>
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<td>7</td>
<td>Design</td>
<td>6 sem vacation</td>
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<td>8</td>
<td>Fabrication and Test</td>
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<td>9</td>
<td>Industry Project Preparation</td>
<td>7 sem vacation</td>
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<td>10</td>
<td>Industry Project Execution</td>
<td>8 semester</td>
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<tr>
<td>11</td>
<td>Effectiveness building</td>
<td>8 sem vacation</td>
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</table>

11 modules spread over 5 semesters
Teaching Strategy

Combination of
  Instruct and Demonstrate
  Observe and Discover

Focus on Self-Learning

Pareto principle
  Cover only subjects that are used 90% of the times in industry

Industry Volunteers as Coaches

Trekking
  Connection to nature and physical fitness
  Character building through 7 habits

Balanced, Enjoyable but Demanding
Great Opportunity to become industry ready!

SAEINDIA automotive SOP

Students
3 compelling reasons!

**Placement**
- Almost assured placement

**Industry appreciation**
- Exposure to industry
- Projects coached by practicing engineers
- Skill development for industrial problem solving

**Skill set to succeed**
- Problem solving
- CAD and productivity tools
- Communication and team working

Unique opportunity for students to become Industry ready!
Personal Commitment
High level of personal commitment is required
Almost all semester vacations will be engaged

Academic requirements
Starts with students in third semester
No arrears allowed
SAEINDIA Automotive Student Orientation Program

Great Opportunity for Engineering Colleges
Why to host a SOP?

3 compelling reasons!

Window to Industry
- Interaction with practicing engineers and managers
- Creating facilities relevant to industry
- Industry projects

Student Placement
- Exposure to industry
- Projects coached by practicing engineers
- Skill development for industrial problem solving

Faculty Development
- Learning with practicing engineers and experts
- Capability to handle industrial projects and research
- Motivation to develop students and institute

Unique opportunity help students and connect with Industry!
Great Opportunity for Young Faculty

SAEINDEIA Automotive SOP

Lead Instructors
Why to become a lead faculty?

5 compelling reasons!

- **Building Knowledge**
  - Physical connection
  - Industry processes

- **Better Teaching**
  - New teaching methods and tools

- **Industry Projects**
  - Physical connection
  - Industry oriented facilities in college
  - Interaction with practicing engineers

- **Better Compensation**
  - Faculty fee + optional curriculum development activities
  - Sponsored projects
  - Faster professional growth

- **Image and Respect**
  - in student community
  - Practicing engineers
  - College management

Enhancing the Image as a Respected Teacher!
Benefits are confirmed and program is stable now!

First Attempt (2007)
- Started with 13 students
- Stopped to see the result

Re-Launch (2010)
- First batch students passed out
- Excellent feedback from industry
- Restarted the program in two colleges

(2011)
- 3 colleges
- >100 students
- WABCO and Mahindra supporting

Date: 10-10-2016
Let us work together to achieve

India Vision 2020