The Capstone project crystallises various learnings of a student and gives them a cumulative mastery of all their experiences at SUTD.

SUTD is set up to develop technically-grounded leaders and innovators who will contribute to improving the world. Believing that society is in need of technology-based services, products and systems, SUTD broke from tradition to provide students with a multidisciplinary curriculum delivered via a hands-on, collaborative learning pedagogy and environment. A key part of this philosophy is the Capstone project.

The Capstone project brings together students from different pillars to work in design teams, contributing their respective expertise and skills to solve real-world challenges. It also provides them with a realistic design situation where projects usually span multiple disciplines and require team-based efforts to create a solution.

SUTD would like to invite you to join us as Capstone Partners to provide real-world projects that challenge our students to think, innovate and develop solutions that will change the world.

**INDUSTRY-BASED CAPSTONE PROJECT**

A Capstone project is an industry-based project which gives senior year undergraduate students the opportunity to practically apply the knowledge, principles, concepts and techniques they have learned to solve real-world, multi-discipline challenges. It aims to give students a holistic, integrative design experience that requires an extensive range of technological design skills and knowledge such as:

- Identifying needs
- Transforming needs into technical specifications or design strategies
- Applying modelling techniques and evaluating design alternatives
- Working as a team to resolve challenges in designing and producing a solution
- Validating solutions to meet specifications and needs

**CAPSTONE PROJECT PHASE**

Students will work on the project mainly on-campus with SUTD faculty as instructors and Capstone Partners as mentors during the period January to August. It is a two-term integrated design experience in the senior year. The faculty instructors and mentors will jointly supervise and guide the project team to fulfill the project scope and deliverables. At the end of the project period, a final report will be produced and shared with Capstone Partners.
CONTRIBUTIONS FROM CAPSTONE PARTNER

Capstone Partners should provide:

- Projects that involve students from at least 2 different pillars
- Projects that have enough scope for 5-6 students per team
- Projects that last 2 terms (from January to August)
- Projects that fulfill university learning objectives
- Mentors who will work closely with students and faculty instructors
- A sponsored sum of at least $5000 per team to cover design, prototype and project materials

VALUE TO CAPSTONE PARTNER

Capstone Partners can look forward to:

- Gaining access to design and technology orientated students to investigate your technical/business challenges at low cost and with minimal risks
- Owning intellectual property generated during the Capstone project
- Gaining access to a wide range of faculty technical expertise
- Having consistent exposure to gauge the abilities of students over the two-term (8-month) project duration to recruit the right talent with the right attitude and understanding of your business environment

HOW TO PARTICIPATE AS A CAPSTONE PARTNER

Be a Capstone Partner simply by:

- Providing details of your proposed Capstone projects using the ‘Project Form’ brief. (Please request for an editable softcopy from the Capstone Office)
- The ‘Project Form’ brief will help to facilitate subsequent project scoping discussions with SUTD to fine-tune the proposals.
- When the project scoping is completed, the approved project will be accepted as a Capstone project for student application and placement during November and December.
- Signing the standard Capstone agreement letter. (Note: All intellectual properties generated during the Capstone project belong to the Capstone Partner. There are non-disclosure clauses to safeguard confidential information.)
- Completing project scoping discussions and signing of Capstone agreement letters latest by October, before the project starts in January the following year.

CAPSTONE OFFICE CONTACT

For any queries, please contact the Capstone Office:

- Telephone: 6499 4076
- Email: capstone@sutd.edu.sg

MORE ABOUT SUTD

The Singapore University of Technology and Design is established in collaboration with MIT to advance knowledge and nurture technically grounded leaders and innovators to serve societal needs. This will be accomplished, with a focus on Design, through an integrated multi-disciplinary curriculum and research.

There are four “pillars” or specialisations that prepare students for roles that involve design, technical leadership, and creative thinking:

- Architecture and Sustainable Design (ASD)
- Engineering Product Development (EPD)
- Engineering Systems and Design (ESD)
- Information Systems Technology and Design (ISTD)
<table>
<thead>
<tr>
<th><strong>Name of Company/Organisation/Agency</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Contact Person &amp; Contact Information</strong></td>
<td>Name:</td>
</tr>
<tr>
<td></td>
<td>Email:</td>
</tr>
<tr>
<td></td>
<td>DID:</td>
</tr>
<tr>
<td><strong>Project Title</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Project Background and Objectives</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Scope</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Deliverable(s)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Applicable Sponsor Sum (to cover design &amp; project materials)</strong></td>
<td>$5000 (depending on project scope, a higher sum for more design materials could be required)</td>
</tr>
<tr>
<td><strong>Other Remarks</strong></td>
<td></td>
</tr>
</tbody>
</table>
The Singapore University of Technology and Design (SUTD) is established in collaboration with MIT to advance knowledge and nurture technically grounded leaders and innovators to serve societal needs. This will be accomplished, with a focus on Design, through an integrated multi-disciplinary curriculum and research.
There are four “pillars” or specialisations:

- Architecture and Sustainable Design (ASD)
- Engineering Product Development (EPD)
- Engineering Systems and Design (ESD)
- Information Systems Technology and Design (ISTD)

At least 2 Pillars for Capstone
Capstone Project

A capstone project is an industry-based, multi-disciplinary project for senior-year students to apply the design principles, concepts and techniques they have learned to solve real-world problems.
Nature of Capstone Project

To include an extensive range of technological design skills and engineering knowledge such as:

- Identification of needs
- Transforming needs into technical specifications or design strategies
- Applying modelling techniques and evaluating design alternatives
- Using teamwork to resolve the challenges in designing and producing tangible outcomes.
Capstone Project Phase

January – August

Students will work on-campus with faculty instructors and mentors from companies/government agencies

5-6 students team: Regular report updates and project review meetings

A final report & presentation will be shared with the companies/government agencies by the end of the project period.
Examples of Capstone Projects
Re-designing an existing process to be either automated or more efficient

Reducing process errors via product, process, IT and spatial design
**Inputs from Capstone Partners**

- **Project that lasts 8 months (from Jan to Aug)**
- **Provide a mentor who will work closely with students and faculty advisors**
- **Provide a sponsor sum to cover design and project materials**
- **Project scoping and Capstone agreement letter to be completed latest by Oct**

- **At least 2 pillars with scope for 5-6 students per team**
- **Project that fulfills university learning objectives**
Project Sourcing Phase: Till Oct

First Contact
- Introduction of Capstone program
  - Explain nature and requirements of Capstone projects

Project Scoping
- Joint discussion between Capstone committee and industry partner to:
  - Understand project nature and background
  - Determine project scope and deliverables
  - Determine appropriate pillar and student quantity

Capstone Approved
- Approved Capstone projects will go into a holding list to be later published for student application and placement
- Industry partner to sign standard Capstone agreement (IP to belong to industry partner)

Iterative
Capstone Program Schedule

- Now
- Capstone Project Sourcing
- 1 Nov 14
- Capstone Project List Published
- 15 Nov 2014
- Finalize Capstone Student Team Members
- 26 Jan 15
- Start of Projects
- May 15
- Mid-Term Review
- 14 Aug 15
- End of Project/Final Presentations
- Aug 15
- Capstone Showcase Day

- Project Scoping with Capstone Partners
- Student Application & Placement
- Internal Kick-Off
Value of Capstone Program

- Capstone Partners will gain access to design & technology orientated students to investigate your business challenges.
- The 8 months of project duration allows consistent exposure to gauge the abilities of students (longer than the usual 6 months probation).
- Employed students will straightaway understand your business and operations domains.
- Access to wide range of faculty technical expertise
- An opportunity to recruit the right talent with the right attitude and right knowledge of your business environment.
Capstone Learning Objectives

- Develop expertise in planning & design assessment
- Demonstrate teamwork capability
- Demonstrate communication skills
- Develop knowledge of societal responsibilities
- Continuous self-development and learning
- Interpret a design problem
- Demonstrate creative-thinking and judgment capability
- Develop capabilities for design reasoning
Capstone Learning Objectives

1. Interpret a design problem based on an understanding of the design, technological, social and business environment in ways that highlight design requirements, opportunities as well as critical challenges.

2. Demonstrate creative-thinking and judgment capability in tackling complex design problems.

3. Develop basic capabilities for reasoning about design alternatives, such as models, sketches, algorithms, computer simulations, spreadsheets and prototypes.

4. Develop expertise in planning and conducting design verification and critical assessment of a prototype product, service, system, or design.

5. Demonstrate the capability of being effective in teams.

6. Demonstrate communication skills using a variety of media and representation techniques.

7. Develop knowledge of the significance of societal responsibilities and contributions that can be made as a designer and a technological innovator.

8. Express awareness of continuous self-development and learning.
Next Step

1. Please discuss about suitable Capstone projects

2. Provide project details in ‘WORD’ document attached for next scoping session with SUTD
Capstone Office

- General Enquiries
  - Email: capstone@sutd.edu.sg
  - Tel: 6499 4076

- Capstone Program Director
  - kenneth_lo@sutd.edu.sg
  - DID: 6499 4890