

## Enterprise and Business Planning for Engineers

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### Abstract

Enterprise is an important element of government strategy to increase productivity and support the creation and maintenance of a healthy economic climate. Whilst there has been lively debate about best ways of embedding entrepreneurship into the engineering curriculum, so far no definitive approach has emerged.

Conscious of the importance of the enterprise agenda in higher education, the Department of Mechanical Engineering at Sheffield University aims to remain at the forefront of the competition by meeting customer expectations and fulfilling their needs. We have therefore made a concerted effort to increase students' entrepreneurial and intrapreneurial potential over the past three years. Consequently, several modules and degree programmes have been created specifically to meet these needs.

This case study presents two modules as representative examples of how mechanical engineers are gaining an insight into the entrepreneurial world.

### Background and key features of the modules

#### 1 Enterprise and Technology

Module size	Single
Open / restricted	Restricted
Core/Option	Core
Availability on/off campus	On campus
Total student study hours	100
Number of weeks	10 weeks

This module was designed with the main objective of encouraging first year students to think of themselves as potential entrepreneurs, not to be afraid of the word 'enterprise', and to think of enterprise as a route to commercialise their engineering skills. Additionally, the module was developed in a rather unconventional way, whereby students would receive the knowledge through quotes and analogies and then reflect on the knowledge acquired through group dynamics.

#### 2 Business Planning

Module size	Single
Open / restricted	Restricted
Core/Option	Option
Availability on/off campus	On campus
Total student study hours	100
Number of weeks	10 weeks

This highly innovative business planning module uses a "reality teaching and learning" approach. Students are given a real commercial problem provided by real customers. They are asked to apply their engineering knowledge to solve the problem and write a financially and commercially viable business plan for it. They receive just 10% to 15% traditional lecturing. The remainder is based on case studies and workshops, and presentations from relevant speakers such as bankers, customers, intellectual property consultants and real

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## **Table of Contents Sample Civil Engineering Business Plan**

1. Understanding the eBook Sample Civil Engineering Business Plan
  - The Rise of Digital Reading Sample Civil Engineering Business Plan
  - Advantages of eBooks Over Traditional Books
2. Identifying Sample Civil Engineering Business Plan
  - Exploring Different Genres
  - Considering Fiction vs. Non-Fiction
  - Determining Your Reading Goals
3. Choosing the Right eBook Platform
  - Popular eBook Platforms
  - Features to Look for in an Sample Civil Engineering Business Plan
  - User-Friendly Interface
4. Exploring eBook Recommendations from Sample Civil Engineering Business Plan
  - Personalized Recommendations
  - Sample Civil Engineering Business Plan User Reviews and Ratings
  - Sample Civil Engineering Business Plan and Bestseller Lists
5. Accessing Sample Civil Engineering Business Plan Free and Paid eBooks
  - Sample Civil Engineering Business Plan Public Domain eBooks
  - Sample Civil Engineering Business Plan eBook Subscription Services

- Sample Civil Engineering Business Plan Budget-Friendly Options
- 6. Navigating Sample Civil Engineering Business Plan eBook Formats
  - ePub, PDF, MOBI, and More
  - Sample Civil Engineering Business Plan Compatibility with Devices
  - Sample Civil Engineering Business Plan Enhanced eBook Features
- 7. Enhancing Your Reading Experience
  - Adjustable Fonts and Text Sizes of Sample Civil Engineering Business Plan
  - Highlighting and Note-Taking Sample Civil Engineering Business Plan
  - Interactive Elements Sample Civil Engineering Business Plan
- 8. Staying Engaged with Sample Civil Engineering Business Plan
  - Joining Online Reading Communities
  - Participating in Virtual Book Clubs
  - Following Authors and Publishers Sample Civil Engineering Business Plan
- 9. Balancing eBooks and Physical Books Sample Civil Engineering Business Plan
  - Benefits of a Digital Library
  - Creating a Diverse Reading Collection Sample Civil Engineering Business Plan
- 10. Overcoming Reading Challenges
  - Dealing with Digital Eye Strain
  - Minimizing Distractions
  - Managing Screen Time
- 11. Cultivating a Reading Routine Sample Civil Engineering Business Plan
  - Setting Reading Goals Sample Civil Engineering Business Plan
  - Carving Out Dedicated Reading Time
- 12. Sourcing Reliable Information of Sample Civil Engineering Business Plan
  - Fact-Checking eBook Content of Sample Civil Engineering Business Plan
  - Distinguishing Credible Sources
- 13. Promoting Lifelong Learning
  - Utilizing eBooks for Skill Development
  - Exploring Educational eBooks
- 14. Embracing eBook Trends

- Integration of Multimedia Elements
- Interactive and Gamified eBooks

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