



College of Business, Hospitality and Tourism Studies

Department of Management, IR and OHS

EEE 609 - ENGINEERING TECHNOLOGY STUDIES

Final Examination: Semester 11 2015

QUESTION PAPER

This examination constitutes 50% of total assessment of this unit and students must score 40/100 in this examination in order to pass this unit.

INSTRUCTIONS

1. Time Allowed: **3 HOURS** with additional **10 MINUTES** reading time.
2. **All** answers are to be written in the **Answer Booklet** provided.
3. Write your **ID Number** on **ALL** pages of your Answer Booklet and any extra sheets that you use.
4. This is a **closed book examination**. You are not permitted to access any books, notes or other forms of written or electronic materials.
5. Attach the **extra sheets** securely at appropriate place before handing-in the Answer Booklet to the supervisor.

SECTIONS	QUESTIONS	MARKS
Section A: Case Study	2 Case Studies x 8 questions ALL COMPULSORY	20
Section B: Short Answers	10 Questions. ANSWER ANY 6	60
Section C: Essays	4 Questions. ANSWER ONE ONLY	20
Total		100/40%

There are **TWO** case studies in this section. Answers **ALL** the questions that follow after carefully reading and thinking through the scenario presented.

CASE 1: CREATING A HIGH PERFORMANCE CULTURE

Introduction

The culture of an organization is a way of describing the typical way in which that organization operates. It is something that is created over time by the organization and the people that work for it. Siemens is built on a high performance culture. This means that everyone share one share the same vision and, values and busts each other's contribution.

Siemens is a global electronics business with a turnover of around £60 billion a year. Its global headquarters are based in Germany but has sites around the world including around 100 in the UK with its UK HQ in Berkshire. Siemens products touch all our ranging from kitchen equipment to power generation and from traffic lights to hospital scanners.

HR development

Siemens is committed to helping its employees to develop and fulfill themselves at work. They may want more training, more interesting jobs or just a better work-life balance. Siemens knows that to maintain and develop the excellent workforce that, it has Good people management. It believes that its human resources should be actively involved (called 'engagement') in its activities. This is a key plank of Siemens' business strategy.

People Excellence

This is the name given to the part of the strategy that relates to people management. It consists of four main elements:

- * achieving a high performance culture
- * increasing the global talent pool
- * strengthening expert careers
- * Siemens Leadership Excellence Programmer (SLE).

At its heart is the building of a high performance culture. Employees know that they are valued and busted and this helps to motivate them. Siemens uses a number of ways to make sure that it shows its appreciation of employees. This all helps them to feel part of a successful team and helps Siemens compete more effectively.

Creating the culture

The high performance culture is based on teamwork. Targets are set for the business and these are related to individual and team targets. In this way, everyone is working towards better results. As team performance improves over time, so does the business.

Talent management

Siemens makes sure that all of its employees, not just the high fliers, are supported to reach their potential. It matches individuals' talents with tasks. Talent management allows for:

- * Job enrichment. Where extra tasks or responsibility can make a job more rewarding and
- * Job enlargement, where the scope of a job is widened and extra skills developed.

Talent management is applied to the business globally as a key part of the business strategy. It is closely linked to performance management. Performance management is used to monitor progress and set objectives for employees. It allows an honest dialogue to take place so everyone knows how well they are performing and how they might improve. This feeds directly into the high performance culture.

Conclusion

The success of an organization can be traced back to its people. Siemens demonstrates this well. Its high performance culture supports people and helps them to reach their potential. This helps Siemens to be competitive.

QUESTIONS

1. **How does Siemens seek to provide good career opportunities for employees? (2 marks)**
2. **Describe one of the systems that Siemens has created which provides development opportunities for employees at work. (3 marks)**
3. **How important is the appraisal system in helping to create shared understandings the objectives of the organization and personal objectives of individual employees? (2 marks)**
4. **How effective do you think the Siemens approach to people management will be in creating great results? (3 marks)**

CASE 2: MANAGING RISK THROUGH EFFECTIVE. TEAM-BASED DECISION MAKING

Introduction

RWE Npower is an integrated energy company. It is the third largest supplier of electricity, through its Npower brand and one of the largest electricity generators. It is part of the RWE Group, which is one of the largest European energy Utilities. Energy Companies have a responsibility to maintain supplies of energy 24/7. This means that they have to be aware of and manage risk. There is a risk involved in all business activity. Managing risk successfully means striking a balance between risk, cost and returns.

Importance

RWE Npower is an important contributor to the economy. It provides jobs, helps people maintain and increase their standard of living by supplying energy and invests in large capital projects. The most visible face of the business is its huge power stations but it is also involved in developing alternative forms of energy such as biomass plants and wind farms. It seeks green or sustainable solutions to problems wherever possible.

Types of problems

There are different types of business problems and therefore different solutions to them.

- Deviation problems are where targets are not being met. Problem solving in this case is centered on closing the gaps.
- Improvement problems. Here Solutions need to address how the business can become for example more efficient or greener.
- Open-ended problems where conventional solutions will not work. Solutions are generally linked to the idea of 'thinking outside the box' i.e. coming up with new and untried ideas.

Engineers at RWE Npower have to handle these problems all the time. In the first two cases, there are often proven techniques and solutions which can be worked out in teams. Team work brings together engineers with different skills and experience. Teamwork encourages team members to bounce ideas off each other so can be fun as well as leading to solutions have saved RWE Npower millions.

Creative problem-solving

This is linked to open-ended problems. New solutions mean new risks, however, and engineers need to understand these. They have to take into account possible costs and health and safety issues along with the technical aspects of the solution. Solutions must take into account the needs

of the customer. For example, small defects in turbine blades in power stations are inevitable during their working life. When these are reported, managers need weigh up the various options repair, up the various options (shutdown, repair, replace etc.), The first priority is health and safety, but then they consider commercial criteria, including cost and customer needs.

Graduates

RWE Npower employs graduate engineers straight from university. They are trained and have a good career path in the company. They are encouraged to think for themselves and solutions to problems. Some solutions can save the company millions so as its investment in graduates is worthwhile. Develop creative solutions to problems. Some solutions can save the company millions so RWE Npower knows its investment in graduates is worthwhile.

Conclusion

RWE Npower needs good engineers to be able to fulfill its commitment to supply energy 24/7. These engineers need to be not Just skilled at their specialisms, but able to solve problems in a creative way.

QUESTIONS

1. What do you understand by the term, 'thinking outside the box'? Give an example of how this can be applied to engineers working for RWE Npower. (2 marks)
2. How does encouraging thinking outside the box help RWE Npower to make improvements in the way in which it operates? (2 marks)
3. Explain how encouraging engineers at RWE Npower to think outside the box has led to increased motivation for these employees. (2 marks)
4. Recommend way in which another organization of your choice might improve its employees to think in creative ways about work. Results through encouraging its employees to think in creative ways about work-related problems. (4 marks)

SECTION B:

SHORT ANSWER QUESTIONS

[60 MARKS]

There are **TEN (10)** questions in this section. Answer **ANY SIX** questions. Each question is worth **10 marks**.

1. Briefly discuss the difference between engineering management from scientific management.
2. Discuss the difference between strategic and financial controls.

3. Describe the relationship between strategy and structure and how they can improve organization efficiency and effectiveness.
4. Discuss the relevance of engineering Management to your studies?
5. Identify and discuss three important issues relating to Technology Evaluation?
6. List and explain very briefly the four (4) main criteria for assessing the success of a project.
7. In the appropriate leadership styles, there are five (5) skills of effective leaders. Discuss any three (2) leadership skills.
8. An Entrepreneur is a person who organizes and manages a business undertaking, assuming the risk for the sake of profit. Any person (any age) who starts and operates a business is an entrepreneur. Why some businesses do not Pursue Opportunities?
9. What are the two formal processes within a risk management program?
10. Discuss the important factors affecting the motivation of technical professionals in an engineering consulting firm.

SECTION C:

ESSAY QUESTIONS

[20 MARKS]

There are **FOUR (4)** questions in this section. Answer **ANY ONE (1)** question listed. Each question is worth **20** marks.

QUESTION 1

In the past decades business has found professional ethics and social responsibilities to be a developing challenge. Specifically, firms are learning that they must be aware of, and responsive to, three social issues; equal opportunity, ecology and consumerism.

Discuss the importance of professional ethics & responsibilities for engineering managers.

QUESTION 2

Industrial revolution had a tremendous impact on business operations. The putting out system eventually gave way to factory system. With this change came new challenge and new opportunities.

Discuss how you can apply engineering management to engineering organizations.

QUESTION 3

Leadership is defined as the ability to influence and inspire the actions of people to accomplish worthwhile goals’.

If you were given the opportunity to lead an engineering organization discuss how the issues of leadership, delegation, motivation, team building, productivity, industrial relations to typical engineering organizations.

QUESTION 4

“If you don’t know where you are going, any path will get you there,” but when one has a equal goal, as business have, planning is essential.

Describe the different functions of engineering management.

THE END