



Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David

Examination Answer Books

12 Pages

Instructions to Candidates

1. Please give the information requested in the boxes below.
2. Enter your name in the space provided to the right, fold over and seal down (using the label provided) to hide your name.
3. The answers must be legibly written. The Examiners can either ignore illegible script or have it typed and the expense of typing charged to the candidate.
4. Write your answers in ink.
5. Begin each answer on a fresh page. Do all rough work in the answer book and cross it through.
6. No part of this book is to be torn out; it must be handed in complete.
7. If more books than one are used, fasten them together using the tags available from the invigilator(s).
8. **Every book must be handed in. In no circumstances may answer books, used or unused, be taken out of the examination venue.**

Complete, fold and seal
(see note 2 below)

SURNAME: Catello - Davis

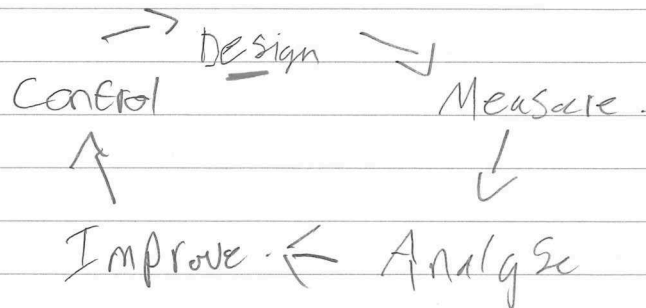
FORENAME(S): Iwan

1	Student Number	1809800
2	Title of Examination Paper	EMy Mawr
3	Module Code	SGEE 6004
4	Date and Time of Examination	09:30 - 12:00
5	Examination Venue	
6	Seat Number	
7	Number of Answer Books handed in	

List the numbers of the questions you have attempted	Office Use
1	12
4	8
Total	20 ✓

Mark confirmed as
20 (KC)

Q1) The DMAIC Cycle stands for: Define, measure, Analyse, Improve and Control and can be pictorially displayed thusly:



These graphics is a useful demonstration as it pictorially displays the process by which when each facet plays into one another.

Individually these concepts need clarification and distinguishing.

Design is the phase in which a project or project is drafted, in which a specific solution can be tailored to a specific problem. This germination is ideas is critical in defining the scope of the project.

Measuring involves ascertaining the chosen systems performance. This entails also data collection in understanding how a chosen system operates. This information is vital in understanding a system as the data collected can be utilized in the next process.

P.T.O

The analysis stage of the process uses the data gathered from the measuring stage to assess the current systems performance relative to the desired outcome or the maximum producing capability of a system and/or its reliability.

The Improvement stage is where policies, methods, regime and doctrines are drafted to remedy the problems outlined in the design. This is achieved via intrapersonal team discussion and analyses relating to data in regards to what specific practice needs enacting.

Finally, the Control phase is where the policies are enacted and monitored by competent staff. The policies will vary from system to system, any well known methods include SPC and ISO 9000.

Using this concept we can develop a critical evaluation of the process via a case study. For example, a company ~~aims to~~ the produces ~~the~~ ~~process~~ drives a reduce in failure rate on its batch of produces. To this end a team of people must be assembled to first ascertain the exact point in the system of most ~~production~~ systems gather Pareto distribution. Once a problem is found the team must then enact means to ameliorate this.

PCB's

Using our case study, we shall imagine that the bottleneck of the process is where copper is introduced into the process is where more errors occur. From this the team can then investigate the possible solutions. Such as buying of machinery that singular part of the process, this is time consuming and can involve a lot of cost. This is why individuals evaluating the analysis may be allowed and scrutinized.

From this case study we can observe that the process is very labourious and requires a team of dedicated and highly trained employees to execute this process. This time and training also requires a lot of cost and resources that must be accounted for via a cost/benefit analysis. We can empirically judge whether or not investment in improving reliability is worth it. Such resources in the first place. This training also makes these employees highly specialised and employee prospects for competing farms. It is also worth noting that in some cases simply focusing on simply means such as as been and SS can ameliorate a given problem without having to spend more extensive time and money on a DMAIC system that would be superfluous overall six-sigma efforts. A logical and empirical methodology for system reliability and process capability is expected in the correct context.

Q4) Total productive maintenance has a philosophy grounded in the idea that reliability is conducive to productivity.

TPM has a focus on pro-active instead of reactive activities. The main ends of TPM is to reduce the mean time between failures (MTBF). This is achieved via a predict approach.

Firstly the MTBF does more best be obtained, analysed and dissected to determine what parts of a system cause most failures. From this policies can be enacted to reduce this mean time between failures. This can be achieved by various methods such as planned preventive maintenance, overhauls, maintenance and construction methods to relay critical information between maintenance shops, policies such as 5S.

This policy is in the long superior to a breakdown maintenance approach. As a breakdown approach does not address underlying issues of present. A data analysis can be carried out to determine if there is a correlation between a breakdown and a certain part of a system, once again this is purely distribution of work. Using this approach the relatively low inputs that effect a lot of outputs can be targeted. By enacting a preventive maintenance method, downtime, productivity and reliability can drastically change the performance of a system or can be altered. From now many companies use it.

A Tpm system has to be enacted via group consensus and only works effectively. In a team setting, this is conducive to team working and benefits the company greatly as information is disseminated at a greater rate unlike in a Bureaucratic system.

Overall the Tpm approach is a worthy investment for a company as it is easier early to implement in relation to the benefits gained.