



FURTHER READING

Want to know more? Visit the below sites:

- <http://www.technologystudent.com/cam/camex.htm>
- <https://www.bbc.com/bitesize/topics/zhv8q6f>



KEY KNOWLEDGE


Flexible Manufacturing Systems (FMS) :involves an assembly of automated machines commonly used on short-run batch production lines where the products frequently change.

Lean Manufacturing: It aims to manufacture products just before they are required to eliminate areas of waste including:

Overproduction/Waiting/Transportation/Inappropriate processing/Excessive inventory/Unnecessary motion/ Defects

Just In Time (JIT) : Items are created as they are demanded. No surplus stock of raw material

1. CAD – Computer Aided Design

| Advantages of CAD | Disadvantages of CAD |
|---|---|
| Designs can be created, saved and edited easily, saving time | CAD software is complex to learn |
| Designs or parts of designs can be easily copied or repeated | Software can be very expensive |
| Designs can be worked on by remote teams simultaneously | Compatibility issues with software |
| Designs can be rendered to look photo-realistic to gather public opinion in a range of finishes | Security issues - Risk of data being corrupted or hacked |
| CAD is very accurate |  CAD Software |
| CAD software can process complex stress testing | |

2. CAM – Computer Aided Manufacturing

| Advantages of CAM | Disadvantages of CAM |
|--|--|
| Quick – Speed of production can be increased. | Training is required to operate CAM. |
| Consistency – All parts manufactures are all the same. | High initial outlay for machines. |
| Accuracy – Accuracy can be greatly improved using CAM. | Production stoppage – If the machines break down, the production would stop. |
| Less Mistakes – There is no human error unless pre programmed. | Social issues . Areas can decline as human jobs are taken. |
| Cost Savings – Workforce can be reduced. | |

Design

SPEAK
 READ
 ARTICULATE
 THINK
 QUESTION
 WRITE
 SPELL

Technology

Scales of Production

One off: when you make a unique item

Batch: when you make a few/set amount

Mass: when you make thousands

Continuous: open ended production



KEY VOCAB

CAD FMS One off

CAM JIT Batch

CNC Lean

Manufacturing Mass

Planned obsolescence

CAD stands for _____. It involves _____ products on a _____ rather than pencil and _____.

CAM stands for _____. It involves _____ products with the help of computers.

CAD/CAM is good for global companies as it is easy to _____ with people all over the world via the _____.

(Computer aided design) - (internet) - (making) - (designing) – (paper)
 (Computer aided manufacture) – (computer) - (communicate)