# H.T.I.
## MECHANICAL ENGINEERING
## COURSE

# DIPLOMA PROJECT

## CUSTOMIZING AUTOCAD FOR
## PLANT LAYOUT DESIGN

## M/702

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# CUSTOMIZING AUTOCAD FOR PLANT LAYOUT DESIGN

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## ABSTRACT

By examining about the plant layout design , during this book it achieved through Autocad customization .

Generally layout design is included and other designs like i) product design   ii) schedule design   iii) process design , which it will has be to examine more,   further. Layout design is done in order to help on the best layout ( orientation) of the equipment in a factory area and minimizes the production time ( and obviously the production cost/unit ) of the production goods.

To achieve the plant layout some regulations has to be written down from the beginning of design and to be followed. Are depending to the method which will has to be select to do this. The design has the following methods I) Theoretical method  and ii) Graphical method but nowadays both can be done together by hand or with aid of computer inside special programs that have been design for such purposes.

This project is trying to make the plant layout design inside Autocad by customizing it's MENUS. The modified menu give some sketches of machines and departments which used in a created area of the mechanical factory.

# INTRODUCTION

As the book going on it will have to analyze everything that
has to do with the plant layout. Plant layout is a problem that
can be found in some large industrial places were many factors
can take place for the efficient production. To solve this
problem some assumptions has to be taken in order to get the
optimum solution and also same steps also has to be followed
during final evaluation.

## i)Formulation of the problem:
Formulation of the problem means that the previous situation
(if any) has to be found in order to write what it happened and
what it must not happen later on but also what would be done to
have as better , an improvement or optimum solution.

## ii)Analysis of the problem:
Usually the main problem after analyzing the solution, is the
transportation cost. This cost has to do with the rectilinear
distances between the machines or departments but also the cost
of moving goods from one place to another (by hands, by fork-
lift, by cranes, from robotics e.t.c.)

## iii)Search for alternative solutions:
Now the creativity has to work on, in order to find some good
solutions the main problem. Obviously sometimes, would found
many  alternative solutions and may be all very good. But after
the problem analysis done the analysis of the several solution
also must be done to find their advantages and disadvantages of
each one.

## iv)Selection of the solution:
This is the most critical part of the previous steps .The
solutions that was found as the best must be also the optimum
for the specific situation. Selecting the wrong solution then
later sometimes the production efficiency will drop and also
the average expenses will increase.

## v)Specification of the solution:
After the correct selection of the optimum solution must
specify what will be expected of from the solution be doing.

These can be done theoretically through assumptions and
formulas but also now this can be done from computers.
Theoretical or graphical methods are using formulas and models
in every plant layout problem. But now computer aided methods
are faster, saving time and many but also can work with more
solutions than human mind can think in such time. For example
in a small problem of 6 departments there 720 !! possible
solutions and can humans find them all ?? But how many can be
found in a problem  of 20 departments where there more than few
BILLIONS solutions !!!.
Coming the specific design solution with the AutoCAD menus
draw to a factory plan view of the machines and departments
orientation. In order to put them to correct sequence or to the
right location some assumptions ,rules, methods must be kept.