DEPARTMENT OF PRODUCTION ENGINEERING

Established in 1983

MILESTONES IN THE DEPARTMENT

1983 Production department started

1987 M.E (Manufacturing Tech.) course started

1993 First Ph.D. produced in the department

1998 M.E (Industrial Engg.) course started

2003 Department has become QIP center

2004 First National Conference on 'MAPS' organized by the department

2007 Best Department Award for the academic year 2006-07

Courses offered:

B.Tech.(Production Engg.)

M.Tech.(Manufacturing Tech.)
M.Tech.(Industrial Engg.)

Ph.D.

MAJOR NEW EQUIPMENTS IN THE DEPARTMENT

Name of the Equipments :

- Emco Turn 55 (2 nos)
- Emco Mill 55 (2 nos)
- CNC Milling Machine
- HMT Turning Center
- Vertical Machining Center
- Leadwell Turning Center
- Deckel Milling Machine
- Hydraulic Press
- Induction Furnace
- Universal Testing Machine
- Scorbot-Robot
- Compact Colour Vision System
- Automatic Storage and Retrieval System
- Ball Bar System
- Witness Simulation Software

EQUIPMENTS PURCHASED UNDER TEQIP

- Scorbot ER5 Plus
- View Flex Machine System
- Pneumatic Trainer Kit
- Electro Pneumatic Trainer Kit
- Hydraulic Trainer Kit
- PLC Trainer Kit
- Multi Component Dynamometer
- Combi Planer
- Blade Grinder
- Surface Grinding Machine
- Foundry Testing Equipments
- Slotting Machine
- Coordinate Measuring Machine

Facilities in the Department

Machine Shop :

- Hydraulic press (200 MT) – BEMCO
- Centreless Grinding Machine
- Universal Tool and Cutter Grinder
- EDM
- Gear Hobbing Machine
- Conventional Machines

Foundry Shop:

- Induction Furnace (molten metal creation)
- Oil Fired Furnace (molten metal creation)
- Cupola Furnace (molten metal creation)
- Sand Testing Equipments for

  Clay content, Permeability, Sand fineness

  Shear and Compression strength of sand

Carpentry Shop

- Wood Lathe
- Wood Planer
- Band Saw and Circular Saw
- Modern Power Planer
- Power Saw (circular and all purpose)
- Routers
- Cordless Drilling Machine

Welding Shop

- **Arc Welding**
  - A.C. welding machine - 0-200 Amp – upto ∅ 4 mm
  - D.C. Arc welding generator -600 Amp – upto ∅ 6 mm
  - Rectifier welding set -600 Amp – upto ∅ 6 mm
- **Gas Welding**
  - Gas welding can be done upto 3mm sheets
- **Air Plasma cutting**
  - For S.S. material to cut below 6 mm thick

CAD LAB.
(Centralized facility at OCTAGON)

CAD packages :

Pro/ENGINEER Wildfire 3 & Pro/MECHANICA Wildfire 3	(Modeling)
Catia v5r9	(Modeling)
Unigraphics NX 2	(Modeling)
AutoCAD 2007	(Modeling)
Mechnical Desktop 5 & Inventor	(Modeling)
NISA 12.0	(Analysis)
ANSYS 11.0	(Analysis)
Ansys LS-DYNA 11.0	(Analysis)
Ansys CFX 11.0	(Analysis)
Ansys ICEM CFD 11.0	(Analysis)
Abaqus 5.6	(Analysis)
MAT LAB 7.0	(General)

SIMULATION LAB.

QUEST (Queuing System Simulation)
VIRTUAL NC (Tool Path Simulation)
U-GRIP (3D Simulation of Robot Work Cell)
SIMQUICK (Spread Sheet Simulation)

TRIAL VERSION :

GPSS (Discrete Event Simulation)
SIMPROCESS(Discrete Event Simulation)
ARENA (Discrete Event Simulation)
CAFIMS (Computer Aided Factory Integration and Management System)

OPERATION MANAGEMENT LAB.

Witness Simulation Software (Discrete Event Simulation)

TRIAL VERSION :

OM- Expert (Modeling & Optimization)

EMCO PC Turn 55 – 2 nos

- Swing over bed : ∅130 mm
- Swing over cross slide : ∅60 mm
- Travel x – axis : 48 mm
  y – axis : 228 mm
- Spindle speed : 130 – 3000 rpm
- Feed range : 0 – 800 mm/min
- Distance between centers : 280 mm
- Spindle motor power : 370/550 W

EMCO PC Mill 55 – 2 nos

- Table size : 420 X 125 mm
- Travel
  - X – axis : 190 mm
  - y – axis : 125 mm
  - z – axis : 190 mm
- Effective z travel : 120 mm
- Spindle speed : 200 – 2500 rpm
- Feed range : 0 – 800 mm/min

TRIAC – 3 Axis CNC Milling Machine

Travel	x-axis	: 260 mm
	y-axis	: 160 mm
	z-axis	: 140 mm
Spindle speed		: 4000 rpm
ATC		: 6 stations
Accuracy (position)		: 40 micron

HMT STC-15 Turning Center

- Max swing dia. over bed : 350 mm
- Max turning dia. : 150 mm
- Max distance spindle face to turret face : 420 mm
- Spindle speed : 100 – 4500 rpm
- Spindle motor power : 7.5 kw
- No. of tools (turret) : 8
- Feed range : 1 - 12000 mm/min
- Accuracy (position) : X- 0.015/300mm
  : Z- 0.025/300mm

HARTFORD VMC

- Table size : 800x400 mm
- Travel x-axis : 510 mm
  - y-axis : 400 mm
  - z-axis : 400 mm
- Spindle speed : 60 – 8000 rpm
- Feed range : 1 - 7000 mm/min
- ATC : 16 stations
- Spindle motor power : 7.5 kw
- Accuracy (position) : ± 0.005/300 mm

Lead well CNC Turning Center

- Max swing dia : 330 mm
- Max swing over slide dia : 136 mm
- Max turning dia : 136 mm
- Max turning length : 150 mm
- Travel X-axis : 230 mm
  y-axis : 230 mm
- Spindle speed : 45 – 4500 rpm
- Spindle motor power : 7.5 kw
- No. of tools : 6
- Feed range : 0-24000 mm/min

Coordinate Measuring Machine

Measuring range xyz : 460*510*420 mm

Measuring Speed : 760 mm/s

Repeatability : 3 micrometer

CONTINUING EDUCATION

S. No.	Name of the Course	Coordinators	Year
1	ISTE short term course on **Welding fabrication and Techniques**	Prof. R.P.Jeyapal	1987
2	ISTE short term course on Welding fabrication and Techniques	Prof. R.P.Jeyapal	1989
3	Workshop on **CAD/CAPP/CAM**	Dr.A.Noorul Haq & Dr.P.Asokan	1994
4	AICTE-ISTE-Short term course on "**CNC Programming And its Operation"**	Dr.M.Sachithanandam & Dr.P.Asokan	1998
5	AICTE-ISTE-Short term course on "Modelling and Simulation of Manufacturing Systems"	Dr.A.Noorul Haq & Dr.P.Asokan	1999
6	AICTE-ISTE-Short term course on "Recent trends in Modelling & Analysis of Manufacturing Systems"	Dr.A.Noorul Haq & Dr.P.Asokan	2002
7	AICTE-ISTE-Short term course on " **Dimensional Engg. & Tolerance Analysis"**	Dr.G.Prabhaharan	2003
8	AICTE-ISTE-Short term course on "Emerging Trends in CAD/CAM-Theory & Practices"	Dr.A.Noorul Haq & Dr.P.Asokan	2004
9	Recent advances in **Logistics and Supply Chain Management** (QIP)	Dr.A.Noorul Haq & Dr. G.Kannan	2007
10	Recent Trends in **Manufaturing Management Systems** (QIP)	Dr.S.Kumanan Mr. S.Prasanna Venkatesan	2007
11	Recent Trends in Advanced Welding Processes (AICTE)	Dr.P.Sathiya	2007

TEQIP ACTIVITIES (Community programmes)

S. No.	Duration	Name of the course	Co ordinators
1	Dec. 2005	Computer Aided Manufacturing	Dr.P.Asokan
2	Dec. 2005	Recent Trends in Manufacturing and Materials	Dr.G.Prabhaharan Dr.S.Aravindan
3	Jan. 2006	Training on Carpentry	Dr.V.Pakkirisamy
4	Jan. 2006	Excel for Scientists and Engineers	Dr.S.Kumanan
5	June 2006	Optimization of Algorithm for Manufacturing Application	Dr.P.Asokan
6	May 2006	Supply Chain Management	Dr.A.Noorul Haq Dr. G.Kannan
7	July 2006	Training on Welding	Dr.V.Pakkirisamy Dr. P.Sathiya
8	July 2006	Quality Engineering in Manufacturing	Dr.G.Prabhaharan
9	Jan. 2007	Laser Materials Processing	Dr.S.Kumanan
10	Feb. 2007	PLC and Automation	Mr. S. Prasanna Venkatesan Dr. J. Jerald
11	Mar. 2007	**CAD Tools**	Mr. P.Senthil Dr. G.Kannan

Training Programmes completed by staff

10 staff completed training on the following areas

Maintenance engineering course,
Welding and Inspection,
Power tools usage,
Welding,
CNC operations,
Training on measurements systems and
TIG Welding

Ph.D.s from the department

(Completed # 34 and Ongoing # 26)

1993	R.Narayanasamy
1995	M.Narayana Rao
1996	T.Selvaraj
1997	R.Bhuvana sekar
1998	P.Asokan
1999	G.Prabhaharan
2000	P.Saravanan
2001	V.Pakkirisamy
2002	S.Sathiyanaranan
2003	R.Subramanian
2004	P.Srinivasan
2005	S.Raghuraman
2005	S.Mallaiappan
2005	Syed Abuthaeer
2005	D.Ravindran
2005	T.Karthikeyan
2005	K.Manisekar
2005	S.Selvakumar
2005	C.Loganathan
2005	R.Venkatesan
2005	T.Venugopal
2005	G.Mohankumar
2006	N.Baskar
2006	P.Sathiya
2006	K.Sivakumar
2006	P.Venkumar
2006	T.Ramesh
2006	J. Jerald
2007	R.Sivasankar
2007	G.Kannan
2007	K.Baskaran
2007	V.Senthilkumar
2007	T. Tamizharasan
2007	M.Chandrasekaran

CONSULTANCY

Organisation	Type of work	Ammount	Year
GKN Sons	Machining work	Rs 2 lakhs	1995-97
BHEL Trichy & RDE Pune	Concurrent engg. Pilot project – sarvatra	Rs 5 lakhs	1998
Prime Engg. Service -Trichy	Modeling and Machining of bottle dies	Rs. 1.5 lakhs	1999
HAPP-Trichy	Reverse Engg. for cold Isostatic Press & Intensifier Unit and Manufactured Production Drawings.	Rs. 2.2 Lakhs	2003
Ultra Tech – Trichy	Machining of dies	Rs. 50,000	2005-06
M/s Tata Steels	Formability and other related studies	Rs. 7.5 lakhs	2005-06

ONGOING PROJECTS

M/s Tata Steels	Formability of special steels	Rs. 10 lakhs	2007
M/s GKN & Sons	Machining work in VMC	Rs. 25,000	2007