

CADEM™

Making students Industry Ready



CNC machining
Computer Aided Manufacturing

CNC machining - the typical syllabus

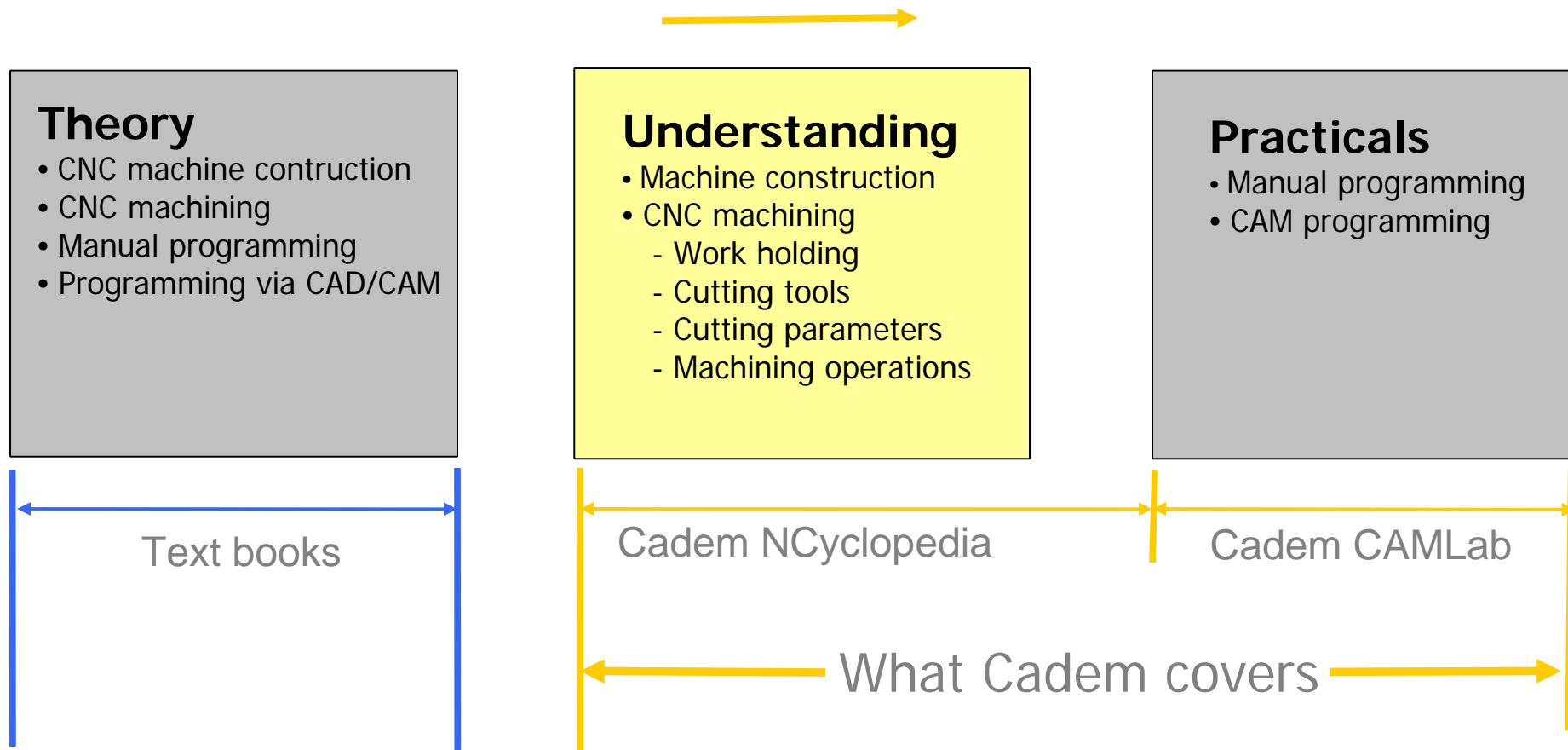
Machines and machining

- Machine construction
- Work holding
- Cutting tools
- Cutting parameters
- Machining operations

Programming

- Manual programming
- Programming through CAD/CAM system

The syllabus and Cadem



NCyclopedia

for learning Machines and machining



- ▶ Introduction
- ▶ Machine construction
- ▶ Machining operations
- ▶ Cutting tools
- ▶ Cutting parameters
- ▶ Work holding
- ▶ Machine setting
- ▶ Machine operation
- ▶ Programming concepts
- ▶ CNC programming
- ▶ Tool mounting procedure
- ▶ CAD/CAM and DNC



Simplifies teaching complex CNC technology through multimedia and videos

Reduces the burden of teaching, since the software is designed for self-study.

Motivates students to develop an interest in the subject, because of the ease-of-use and interesting multimedia content.



SeeNC Turn, seeNC Mill

for learning Manual programming

Checks a manually written program for syntax errors
Lists the errors and locations.
Simulates the tool path.

The screenshot displays the SeeNC Mill software interface. The main window shows a 3D simulation of a milling operation on a part with a rectangular slot and a circular hole. A red arrow points to the simulation area with the label "Simulation".

The right-hand panel shows the "Simulation" tab with the following parameters:

Parameter	Parameter
Machine name	Fanuc 0M
Work coord system	0.0000, 0.0000, 0.0000
Local coord system	
Tool number	1
Tool name	10.0 mm End mill-roug...
Tool diameter	10.0000 mm
Motion	Circular - CCW
X coord	125.0000
Y coord	96.0000
Z coord	-10.0000
Table position	
Spindle speed	1114.0000 rpm
Feed rate	200.0000 mm/min
Spindle status	Cw

Below the simulation, there are two checked options: Auto refresh and Highlight NC program during simulation.

The bottom panel shows the G-code program written by the student:

```
X96. Y125. I0. J-29.  
X125. Y96. I29. J0.  
X154. Y125. I0. J29.  
G01 X162.  
G03 X125. Y162. I-37. J0.  
X88. Y125. I0. J-37.
```

A red arrow points to the line "X125. Y96. I29. J0." with the label "Program written by student".

Another red arrow points to the right-hand panel with the label "Program errors and tool positions".

CAPSturn, CAPSmill

for learning programming through CAD/CAM

Learning CAD/CAM

- Programming from CAD drawing
- Tool path simulation
- Cycle time calculation

The image displays three overlapping software dialog boxes from the CAPSturn CAD/CAM application. The background window is the 'Side slot mill' dialog, which includes tabs for 'Machining data', 'Tool entry / exit', 'Cutting parameters', 'Advanced', and 'Machining locations'. It features a 3D model of a part with a slot and various input fields for 'Work surface Z', 'Depth from work surface', 'Side allowance', and 'Top / bottom allowance'. The 'Parting' dialog box is in the foreground, showing a 3D model of a parting operation. It includes fields for 'Operation name' (Parting), 'Safe approach distance' (2), 'Pecking required?' (unchecked), 'Peck depth' (0), 'Parting start diameter' (11), 'Parting end diameter' (0), 'Overshoot' (1), 'Parting type' (with three icons), 'Chamfer/Radius value' (2), 'Diameter for reduced feed rate', and 'Constant cutting speed ON?' (checked). The 'Cutting parameters' section shows 'Cutting speed' (125 m/min), 'Feed rate' (0.25 mm/rev), and 'Reduced feed rate' (0.7 X Feed rate). The 'Countersink' dialog box is partially visible on the right, showing a 3D model of a countersink operation. It includes a 'Hand of tool' section with 'Left' and 'Right' radio buttons, a 'Show tool' button, and 'OK' and 'Cancel' buttons. The 'Countersink' dialog also shows a 'Large diameter' of 0.8 and a 'Nose angle' of 120.

CADEM covers entire syllabus

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Programming

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CAPSturn / mill

seeNCturn / mill

CADEM - Industry leader

Cadem is India's leading provider of productivity solutions for the manufacturing industry.

IMTMA endorses , the Indian Machine Tool Manufacturers' Association uses CADEM for training engineers from industry on CNC productivity enhancements.

Largest selling CNC software and used by India's best and biggest manufacturing industries.



Indian Machine Tool Manufacturers' Association

CADEM used by 100 + colleges

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Acharya Institute of Technology, Bangalore
Ambedkar Institute of Technology, Bangalore
APS Polytechnic, Bangalore
Arunai Engineering College, Thiruvannamalai
Bahubali College of Engineering, S'belogala
Bannari Amman College of Engineering, Sathy
Bapuji Institute of Engineering Technology,
Davangere
Basavakalyana College of Engineering, Bidar
BCET, Bangalore
BDT College of Engineering, Davangere
BMS Institute of Technology, Yelahanka
BMS College of Engg., Bangalore
BTL Institute of Technology, Bangalore
BVB College of Engineering., Hubli
BVVS Polytechnic., Bagalkot
C.P.C. Polytechnic, Mysore
Central Institute of Tool Design, Hyderabad
College of Engineering, Bhusaval
College of Engineering, Rajaramnagar
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D.R.R. Polytechnic, Davangere
Dayanand Sagar College of Engineering. BLR
Don Bosco Institute of Technology, Bangalore
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Erode Sengunthar College of Engineering, Erode
GM Institute of Technology, Davangere
Gogte Institute of Technology, Belgaum
Government College of Technology, Coimbatore
Government Polytechnic, Belgaum
Government Polytechnic, Bellary
Government Polytechnic, Bhadravati

Government Polytechnic, Bidar
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Government Polytechnic, Karwar
Government Polytechnic, Krishna Rajpet
Government Polytechnic, Kushalnagar
Government Polytechnic, Raichur
Government Polytechnic, Tumkur
Government School of Mains, K.G.F
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Gurunanak Dev Engineering College, Bidar
HKBK College of Engineering, Bangalore
Institute of Aeronautical Engg.College, Hyd
Institute of Road and Transport Technology
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Kolhapur Institute of Technology, Kolhapur
Kruthi Computers, Bangalore
KS Institute of Technology, Bangalore
Kumaraguru College of Engineering, CBE
LMW - Apprentice Training Shop, Coimbatore
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CADEM used by top companies



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