

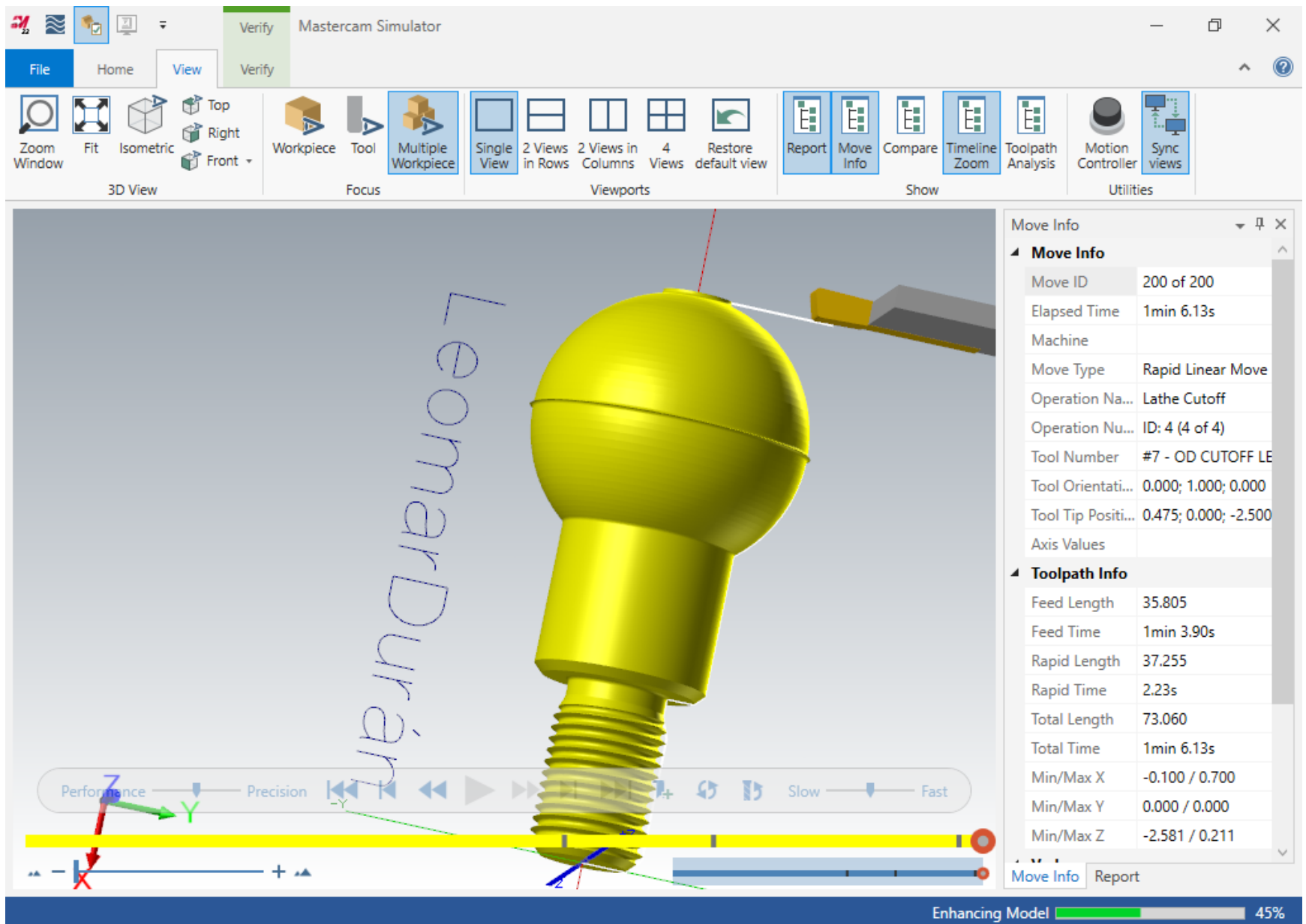
ENGT 3652 Project 6:
Lathe - Ball Hatch

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Chapter 1

Verification of operations in MasterCAM



Chapter 2

The MasterCAM-generated Gcode

```
%
O90688
(PROGRAM NAME - Duran -
  ↳ THREADING_BALLHATCH)
(DATE=DD-MM-YY - 27-04-23 TIME=HH:MM -
  ↳ 11:10)
(MATERIAL - ALUMINUM INCH - 6061)
G20
(TOOL - 3 OFFSET - 3)
(OD FINISH RIGHT - 35 DEG. INSERT -
  ↳ VNMG-431)
G0 T0303
G18
G97 S2728 M03
G0 G54 X1.4 Z.1 M8 (S)
G50 S3600
G96 S1000
G71 P100 Q110 D.035 U0. W0. F.01 (depth of
  ↳ cut)
N100 G0 X-.2 Z.1 G42 S1000 (P, left
  ↳ compensation)
G1 Z0. F.01
X.3487
G3 X.3708 Z-.0046 K-.0157
G1 X.4908 Z-.0646
G3 X.5 Z-.0756 I-.0111 K-.011
G1 Z-.6156
G3 X.4979 Z-.6213 I-.0156
G1 X.43 Z-.7086
Z-.77
X.6387
G3 X.6608 Z-.7746 K-.0156
G1 X.7408 Z-.8146
G3 X.75 Z-.8256 I-.0111 K-.0111
G1 Z-1.4398
G3 X1.1996 Z-1.9 I-.3906 K-.4759
N110 G1 X1.4 G40 (Q, compensation OFF)
G0 Z.1
G28 U0. W0. M05 (V0. is in y, so no need)
T0300 (reset tool 03 offsets)
M01

(TOOL - 4 OFFSET - 4)
(OD THREAD RIGHT INSERT - NONE)
G0 T0404 (THREADING)
G18
G97 S1000 M03
G0 G54 X.7 Z.2107
G76 P010029 Q0 R0
(depth of thread = [CD.500 - X.4405]/2 =
  ↳ 0.02975)
G76 X.4405 Z-.69 K.030 D.020 (for 2 passes)
  ↳ F.05
G28 U0. W0. M05
T0400
M01
(TOOL - 2 OFFSET - 2)
(OD FINISH LEFT - 35 DEG. INSERT -
  ↳ VNMG-431)
G0 T0202
G18
G97 S2728 M03
G0 G54 X1.4 Z-2.5809
G50 S3600
G96 S1000
G71 U.035 R0.
G71 P120 Q130 U0. W0. F.01
N120 G0 X.3 S1000
G1 Z-2.4773 F.01
G2 X1.1996 Z-1.9 I-.1656 K.593
N130 G1 X1.4
G0 Z-2.5809
G28 U0. W0. M05
T0200
M01
(TOOL - 7 OFFSET - 7)
(OD CUTOFF LEFT INSERT - NONE)
G0 T0707
G18
G97 S3321 M03
G0 G54 X1.15 Z-2.5
G50 S3600
G96 S1000
```

G1 X.95 F.0025
X-.0818
X.1182
G0 X.95
G28 U0. W0. M05
T0700
M30
%

Chapter 3

Plot of MasterCAM-generated Gcode in NCViewer

GCode File

```
39 G0 T0404 (THREADING)
40 G18
41 G97 S1000 M03
42 G0 G54 X.7 Z.2107
43 G76 P010029 Q0 R0
44 (depth of thread = [CD.500 - X.4405]/2 = 0.02975)
45 G76 X.4405 Z-.69 K.030 D.020 (for 2 passes) F.05
46 G28 U0. W0. M05
47 T0400
48 M01
49 (TOOL - 2 OFFSET - 2)
50 (OD FINISH LEFT - 35 DEG. INSERT - VNMG-431)
51 G0 T0202
52 G18
53 G97 S2728 M03
54 G0 G54 X1.4 Z-2.5809
55 G50 S3600
56 G96 S1000
57 G71 U.035 R0.
58 G71 P120 Q130 U0. W0. F.01
59 N120 G0 X.3 S1000
60 G1 Z-2.4773 F.01
61 G2 X1.1996 Z-1.9 I-.1656 K.593
62 N130 G1 X1.4
63 G0 Z-2.5809
64 G28 U0. W0. M05
65 T0200
66 M01
67 (TOOL - 7 OFFSET - 7)
68 (OD CUTOFF LEFT INSERT - NONE)
69 G0 T0707
70 G18
71 G97 S3321 M03
72 G0 G54 X1.15 Z-2.5
73 G50 S3600
74 G96 S1000
75 G1 X.95 F.0025
76 X-.0818
77 X.1182
78 G0 X.95
```

PLOT



Digital Read Out

Machine Options

Plot Orientation: **Vertical (Z-Up)**

Diameter Mode (Lathe)

