

Sr. No	Product	Description	Price (inclusive of GST) Rs.
1.	Pen drive	Introduction to Casting Defects: Blow Holes, Shrinkage, Inclusions, Scab, Discontinuities, Pinhole Porosity and others in Ferrous as well as Non Ferrous Casting	4130
2.	Pen drive - 103	Computer based program on Microstructures of Cast Iron	1180
3.	Pen drive - 105	Green Sand Moulding Practices	885
4.	Pen drive - 106	Interactive CD on Manufacturing Techniques & Heat Treatment of S. G. Iron	1770
5.	Pen drive - 107	Efficient Aluminium Melting Practices(English/Hindi)	885
6.	Pen drive - 108	Gravity Die Casting Techniques for Aluminum Casting	1770
7.	Pen drive -109	Shell Molding Process	1770
8.	Pen drive -110	Investment Casting Process – Defect Control Instructor	1770
9.	Pen drive -111	Divided Blast Cupola – Process & Technology	1180
10.	Pen drive – 112	A Journey Through Cold Box Process	1770
11.	Pen drive – 113	Analysis of Defects in Aluminum Castings – Compendium of Case Studies	885
12.	Pen drive – 114	Aluminium High Pressure Die Casting	1770
13.	Pen drive – 115	Inoculation of Cast Irons - Science and Practices	1180
14.	Pen drive – 116	Green Sand Molding Technology – Emphasis on Sand Control	1180
15.	Pen drive – 117	No Bake Technology for Castings – Binder Systems and Molding Equipment	1770
16.	Pen drive – 118	Refractory Coatings for Ferrous and Non-ferrous applications	1770
17.	Pen drive – 119	Instrumentation in Foundries	1770

Books and Information Sheets

Sr No	Description	Price Rs.
1.	Efficient Cupola Design and Operation – Mrs. Sharadini S. Karkhanis	100
2.	Green Sand Preparation and Control – Mr. A. R. Krishnamoorthy	400
3.	Pattern Design – Practical Guidelines – Mr. S. G. Khanolkar	400
4.	Green Sand Practices For Defect Free Casting – Mr. S. Subramanian	400
5.	High Manganese Steel Casting Technology – Mr. V. L. Potnis, Mr. V. D. Joshi & Dr. N.P. Sinha	300
6.	Manual for Foundry Maintenance - Mr. S. Bhasin & Mr. U. Y. Shinde	300
7.	Instrumentation and Process Control Techniques in Foundries – Mr Vishwas Kale	300
8.	Practical Guide for Progressive Foundrymen – Mr. B. K. Shamsundar	400
9.	Management for Success - Mr. Vishwas Kale	250
•	NCTS INFO SHEETS Full set of 120 Nos. Details of Each sheet available on Website	2,400 per set
•	Simulation Software Services per Component	Rs. 8000 onwards + 18% GST

Sets of Technical Information Sheets

1. Molding sand and core sands Rs. 500

- a. Molding Sand - Sampling prepared Greensands
- b. Testing Prepared Molding Sand : Preparation of standard Test Pieces
- c. Testing prepared Molding Sand : Measuring Compactability
- d. Testing prepared Molding Sand : Determination of Moisture Content
- e. Foundry Molding Materials
- f. Basic Principles : Clay Bonded Molding Sands
- g. Green Working Properties of Clay Bonded molding Sands
- h. Basic Properties: properties of clay bonded molding sands in the compacted state
- i. Bentonite type
- j. Property changes and conditioning of recirculating molding sand in the sand system
- k. sands with chemically setting mineral inorganic & Natural Organic Binders
- l. Synthetic Resins
- m. The Behavior of Sands with Organic Binders during Pouring
- n. Carbon Dioxide process
- o. Cement Sand process
- p. Sand Quality Control For Core Making Process
- q. Quality Control Of Mould & Core Coating
- r. Green Sand Properties
- s. No Bake System for Mould & Cores

2. Alloying additions and inoculations Rs. 200

- a. Copper in Grey Iron
- b. Phosphorous in Grey Iron
- c. Addition of Ferro-Alloys and other Alloys to Cast Iron (Part 1)
- d. Addition of Ferro- Alloys to cast Iron (part 2)
- e. Inoculation of SG Iron
- f. Ladle Inoculation Practice
- g. Inoculation of Grey Iron

3. Methoding Rs. 450

- a. Solidification Pattern in steel Castings
- b. Riser of Steel Castings Modules Principle
- c. Modulus calculations for sphere and cube
- d. Modulus calculations for cylinders (Riser and Riser neck)
- e. Five rules of risering steel castings
- f. Use of Chills to Aid feeding (steel castings)
- g. Precautions in use of Chills (steel castings)
- h. Padding (steel castings)
- i. Breaker cores (steel castings)
- j. Gating System for steel Castings
- k. Various Types of Gates (steel Castings)
- l. Pouring Rate & Pouring Time (Steel Castings)
- m. Flow of Metal and Design of Gating System
- n. Calculation of Pouring Time and Choke Area
- o. Design of Gating System (Steel Castings)
- p. Silicon Carbide chills
- q. An Useful Running Method - The Connor Runner

4. Cupola Rs. 260

- a. Cupola operation (General)
- b. Cupola operation (Cupola repairs)
- c. Making sand Bed, Spouts, Tap Hole and Slag hole.
- d. Making Coke - Bed and Getting Cupola ready for charging
- e. Charging the Cupola
- f. Cupola Operation – Melting
- g. Preparation of Tap Hole in Intermittent Tapping Cupola
- h. Selection of Blowing Equipment for Cupola
- i. Selection Cupola Size
- j. Divided Blast Cupola

5. Specifications, testing & microstructure Rs. 430

- a. Chill Control (Wedge test)
- b. Carbon Equivalent of Cast Iron.
- c. Fluidity of Cast Iron
- d. Brinell Hardness Number (BHN) for cast irons.
- e. Measurement of Carbon & Carbon Equivalent - checks for instruments & systems.
- f. Measurement of Molten metal temperature - checks for Instrument & Systems.
- g. Specifications flake graphite iron
- h. Specifications for Spheroidal, Graphite iron.
- i. Ductile Iron Specifications
- j. Preparation of Specimen for Microscopical Examination of Cast Iron.
- k. Etching Techniques
- l. Etching Reagents for Cast Irons
- m. Microstructure of Grey Cast Irons
- n. Graphitization In Grey Cast Irons
- o. Graphitization In Nodular Cast Iron
- p. Effects Of Alloying Elements On Microstructure of S. G. Iron

6. Shell moulding process Rs. 100

- a. Shell Moulding Process
- b. Check List For Operating Shell Moulding Machine And Core Making
- c. Shell Mould Properties
- d. Shell Mould Defects

7. Casting defects Rs. 340

- a. Casting Defect - Cold Crack
- b. Casting Defects - Cavities An Overview
- c. Casting Defects - Cavities - Blow Holes - Pin Holes
- d. Casting defects cavities-blow holes adjacent to inserts, chills chaplets etc.
- e. Casting Defects - Cavities Slag Blow Holes
- f. Casting Defects - Shrinkage General
- g. i) Open or external shrinkage ii) Corner or Fillet shrinkage iii) Core shrinkage
- h. i) Casting defects internal / blind shrinkage ii) Casting defects - line or axial shrinkage
- i. Casting Defects-Macro Shrinkage, Micro Shrinkage, Shrinkage porosity, leakers
- j. Internal Shrinkage Defect In Grey Iron Castings
- k. Surface Sink, Draw And Pipe Defects In Grey Cast Iron Castings
- l. Subsurface Blowholes Associated With Segregation of Manganese Sulphide Inclusion
- m. Lustrous Carbon Defects In Castings

8. Aluminium**Rs. 340**

- a. Melting Non Ferrous Metals in Induction Furnace
- b. Heat Treatment of Aluminium Alloy Castings
- c. Precipitation Treatment of Aluminium Alloys Castings
- d. Difference between Modification & Grain Refinement of Aluminium - Silicon Alloy
- e. Modification Mechanism in Aluminium - Silicon Alloy
- f. Hot Tearing in Aluminium alloy castings
- g. Role of Fluxes in Aluminium casting
- h. Application of Fluxes in Aluminium castings
- i. Use of Nitrogen gas and chlorine gas for degassing of molten Aluminium Alloy
- j. Grain Refinement of Aluminium castings
- k. Test bar for Aluminium alloy castings
- l. Green sand molding for Aluminium castings
- m. Crucibles for Aluminium Melting

9. High tensile brass**Rs. 100**

- a. Effect of Alloying elements in high Tensile brass
- b. Zinc Equivalent in Brass.
- c. Precautions in melting and alloying high tensile brasses
- d. Foundry Characteristic of High Tensile Brasses

10. SPC in foundry**Rs. 200**

- a. SPC - Statistical process control in Foundries
- b. SPC - Charts and Graphs
- c. Pareto Analysis
- d. Cause and Effect Diagram
- e. Scatter Diagram
- f. Histogram
- g. Control Chart

11. Miscellaneous**Rs. 260**

- a. Heat treatment of grey and alloy cast iron (part I stress relieving, annealing & normalising)
- b. Heat Treatment of Grey and Alloy Cast Iron (Part 2-surface hardening by flame & induction hardening and nitriding)
- c. Lining materials for coreless induction furnaces
- d. Ramming procedure for Silica Ramming Mass in coreless induction furnace.
- e. Quality Control In Knockout, Fettling & Handling Of Castings
- f. Hand Shank Ladles
- g. Ordering of Pattern Equipment
- h. Life of Pattern Equipment
- i. Testing of Refractories
- j. Zing Die Casting alloy - Ilzro 14 and 16

The full set of Information Sheets and the sub sets as mentioned above can be supplied as per requirement

Simulation Services:

NCTS provides solidification simulation analysis for the castings at very affordable rates starting from Rs.8000/-.

NCTS uses the AutoCast X1 software for the service. A questionnaire is sent to the customer and 3D drawing in STL format for the as cast component and core (if any) is requested. (If 3D drawing is not available it can be converted from 2D drawing at cost from a local vendor) Full report is generally ready within 2 to 3 working days of receiving PO / mail confirmation. The report includes dimensions and location of Sprue, Runner bar, Ingates; feeders and feed aids if any. The small clips showing mould filling and solidification are also provided.