

INDUSTRIAL DESIGN

Market research
Rapid prototyping
Conceptual design & problem solving
Concept development & trade-off matrix
User interface design
Product sketching
Storyboarding
Modeling
3D rendering & photorealistic imaging
Brand design
Logo creation, design & implementation

MECHANICAL ENGINEERING

Disciplines

Mechanism design
Electromechanical "smart" product design
Packaging & enclosure design
Material research & analysis
Design for Manufacturing and Assembly analysis (DFMA)
Thermal, structural and dynamic finite element analysis (FEA)
Reliability engineering
Process flow analysis
Shock & vibration analysis
Acoustics
Fluidics
CAD surface & solid modeling
Rapid prototyping
Cost/benefit analysis

Documentation & technical project management
Fixture Design
Industrial Design management and transition
Robotics & Mechatronics
Sensors
Control systems design
Thermal systems and simulation
Structural and stress analysis
Optomechanics
Motion control
Laser systems
Pneumatics
Shock and vibration management
High precision alignment systems
Fixture development
Dynamic analysis & simulation

Analysis

Tolerance analysis
Thermal / Structural & structural dynamics
Linkage dynamics

Testing

Test development and management
Agency testing
Environmental testing
HALT/HAST

Design Documentation

General documentation/drafting
GD&T dimensioning
Medical design control

FAI /Disposition process
Drawing-less documentation
PCB control outline

ELECTRICAL AND SOFTWARE ENGINEERING

System Architecture

Hardware, software, and firmware
Definition and development
Cost/performance analysis and optimization
Independent evaluation
Thermal, EMI, and other system tradeoffs
Parametric test development

Embedded Systems

Microcontrollers: PIC AVR, 8051, TMS320, X86, MSP430, etc.
Firmware development (Linux, C/C++, ASM, Perl, etc.)
Real-time multitasking operating environments
Transducer & sensor interface design
Precision positioning controls
Human interface
Networking interfaces (wireless and wired: Bluetooth, Zigbee, WiFi, Ethernet, optical, etc.)
Microprocessors (ARM, xScale, etc)
Image processors (Trident, Sigma, etc)
Embedded PCs (ETX, etc.)



Display drivers and controllers

Software Development

System architecture
Real-time, multitasking applications
Specialized GUI development

Digital Hardware Design

High speed serial interfaces
High speed memory busses (DDR2, DDR3, etc)
FPGAs, PLDs, etc.

RF and Analog Design

Antenna design
RF communications
Modulation techniques
Specialized transmitters & receivers
Cost, power, range optimization
Synthesizers, mixers, VCOs
Spread spectrum
Radio direction finding
Amplifiers, filters, etc.
Audio system design

DSP Design

Algorithm development (Matlab, C, etc.)
Commercial DSP chips
DSP software
Signal reconditioning
Speech recognition & compression

Power Systems

Power systems architecture

Distribution, loading, hot swapping
Micropower battery systems for portable products

Printed Circuit Board Design

High-density packaging
Multiple package types (BGA, TAB, etc.)
High-speed logic and RF circuits
Design for EMI/RFI minimization
Design for manufacturing

INTERDISCIPLINARY ENGINEERING

Conceptual design & problem solving
Detailed product design for high-volume manufacturing
Design for low-cost
Design for Disassembly
Proof-of-concept prototyping
Technology assessment & integration
System/Product Architecture
Systems integration
Design for Manufacture/Assembly
Agency Testing
Production Support
Engineering design reviews
Failure & hazard analysis
Multidisciplinary systems integration
System architecture development
Simulation
Risk management

Transition management to pilot and production manufacturing
Prototype testing & analysis
Technology R&D

MANUFACTURING

Management

Lean manufacturing
Manufacturing strategy
Manufacturing system principles
Supply-chain definition & strategies
Supply-chain management
Materials management
Purchasing strategies and management
Product launch and ramp strategy
Asian sourcing
Tooling support

Engineering

Electrical design for manufacturability
Mechanical design for manufacturability
Assembly DFM
Lean-production line layouts
Pilot & production launches
Yield improvement
Cost-reduction programs
Factory audit and assessment

Process and Design Engineering

Injection molding
Compression molding
Multi-shot molding



Various joining technologies
Cast-metals processes
CNC machining
Metal stamping
Printed-circuit technologies
Printed-circuit assembly
Packaging technologies
Sheetmetal
Die cast
Reaction Injection Molding (RIM)
Thermoforming
Forging

DESIGN TOOLS

Industrial Design

Alias
CoCreate

Mechanical Engineering

PRO/Engineer: Surfacing, Master Model,
Intralink
Solidworks: Surfacing, PDM Works

Electrical & SW Engineering

GNU Tools
OrCAD
PADS for PCB Layout
Visual Studio
CAM 350
NP Lab Development

Analysis

Matlab
Labview
Mechanica
Cosmos

Multimedia:

Illustrator
Photoshop
Flash

Facilities:

Machine Shop
EE Lab

BUSINESS DEVELOPMENT

Market Analysis
Business Planning
Product Strategy

PROGRAM MANAGEMENT

High risk technology management
Inter-disciplinary team management
Systems Engineering
Part Numbering
BOM Tools
Risk Analysis & Mitigation Management
Document Control
Design ECO
Vendor sourcing and management
Requirements Development and
management & allocation

