PART II — ENGLISH ROLE PROFILE

1. Role Purpose

The Senior Design Engineer is a senior mechanical engineering role responsible for carrying MET's robotic, special-machine and advanced-engineering projects from concept through detailed design, manufacturing, assembly, testing, commissioning and project close-out. The role is not limited to producing 3D models or drawings. It requires solving technical uncertainties, making and explaining engineering trade-offs, balancing performance–cost–manufacturability, supporting production, managing interfaces with other disciplines and completing the technical documentation needed to deliver a working system.

What "Senior" means in this role

The successful candidate is expected to go beyond modelling assigned parts: understand the requirement, create solution alternatives, identify risks, recommend technical decisions, release manufacturable designs, follow the outcome on the shop floor/site and guide less-experienced engineers or technicians when needed.

2. Scope of the Role

- Own or lead the mechanical design scope for new robotic cells, special-purpose machines, automation mechanisms and product/platform development projects.
- Translate customer/project requirements into mechanical system requirements and develop/evaluate concept alternatives.
- Perform 3D CAD design of parts, large assemblies, sheet-metal components, welded structures, machine elements and production-ready mechanical details.
- Prepare 2D manufacturing drawings and technical documentation for machining and other manufacturing processes, including the information needed for reliable production.
- Research and technically compare components, support supplier identification and prepare technically correct procurement/purchase lists.
- Follow manufacturing, assembly and commissioning from a design-engineering perspective; investigate nonconformities and manage required design revisions.
- Prepare or contribute to requirements, design, test, maintenance, risk-analysis, mechanical-list/table and project-presentation documentation.
- Contribute to cost and quality improvement activities and ensure designs are not only functional, but manufacturable, maintainable and economically sensible.
- Provide technical inputs to TÜBİTAK, KOSGEB and relevant international R&D/funding projects, including work packages, risks, test/validation plans and technical reporting.
- Support technical development of team members and, when assigned, technical interviewing, task allocation, training and performance feedback.

3. Core Responsibilities

3.1 System & Concept Design

- Convert customer, project-management and cross-functional inputs into clear mechanical functions and design inputs.
- Generate concept options and evaluate motion, loads, reach, cycle requirements, layout, safety, maintainability and manufacturing constraints together.

- Define the mechanical architecture of robotic cells, fixtures, manipulators, conveyors, frames, guarding, tooling and process equipment.
- Identify when uncertain/high-risk topics require calculation, simulation, prototype or physical trials.

3.2 Detailed Design & Design Release

- Create and revise parts, assemblies and drawings in SolidWorks.
- Use Design Tables, Weldments and Sheet Metal functionality effectively where relevant.
- Release design information with enough clarity for manufacturing and procurement, avoiding missing or contradictory technical data.
- Prepare BOMs, mechanical lists, purchased-component lists and relevant technical notes.
- Manage design changes in a traceable way and assess their effects on parts, assemblies, cost, schedule and testing.

3.3 Engineering Calculations, Simulation & Verification

- Perform appropriate engineering calculations and use them to support design decisions.
- Use or coordinate SolidWorks Simulation, ANSYS or appropriate analysis tools for critical design assumptions.
- Define the right scope for simulation and recognize when analysis needs experimental or field validation.
- Contribute to mechanical test plans and acceptance criteria.

3.4 Component & Supplier Technical Selection

- Research bearings, linear guides, gearboxes, motor interfaces, pneumatic/hydraulic elements, sensor mounting, standard machine elements and similar components based on project needs.
- Compare alternatives for technical suitability, availability, cost and lead time.
- Support supplier technical discussions and recommend suitable components.
- Provide technical approval/recommendation; commercial purchase/contract authority remains with the delegated MET function unless explicitly assigned.

3.5 Manufacturing, Assembly & Prototyping Support

- Follow machining, welded fabrication, sheet-metal, assembly and prototyping activities from a design perspective.
- Work closely with production to resolve drawing/manufacturing-method issues and improve manufacturability.
- Feed shop-floor/site lessons back into design and close nonconformities/revisions in a controlled way.
- Provide on-site technical support for critical assemblies when required.

3.6 Testing, Commissioning & Field Support

- Participate in mechanical functional tests, integration tests and project acceptance activities.
- Classify mechanical issues found during testing, create action plans and manage design corrections.
- Provide mechanical engineering support during customer-site commissioning, acceptance or service activities.
- Document test results and lessons learned so they improve future designs.

3.7 Cost, Quality & Continuous Improvement

- Provide technical input to project cost analysis and make high-cost/high-supply-risk design elements visible early.

- Propose design improvements that reduce cost, improve quality, simplify assembly and improve serviceability.
- Use root-cause thinking for recurring manufacturing or assembly problems.
- Identify opportunities for standardization, reuse and modular design where appropriate.

3.8 Project Control & Documentation

- Keep assigned tasks, risks, actions and technical outputs current in MET's project/tracking tools.
- Prepare or complete the mechanical sections of requirements, design, test, maintenance, risk-analysis, mechanical-list and project-presentation documents.
- Participate in or lead technical/manufacturing-status meetings as required.
- Create project visuals, technical presentations and decision-support material.

3.9 R&D and Funded Projects

- Contribute technical goals, methods, work packages, risks, test plans and design content to TÜBİTAK, KOSGEB and relevant international R&D funding applications.
- Report completed engineering work in a traceable manner and produce the technical evidence required for funded projects.
- Help distinguish genuine R&D uncertainty from routine engineering so technical reporting remains accurate.

3.10 Leadership & Team Development

- Mentor less-experienced engineers and technicians in design, drawings, manufacturability and structured problem solving.
- Lead design reviews, technical prioritization and work allocation when assigned.
- Support technical interviews and practical assessments during recruitment.
- Give clear, respectful, evidence-based technical feedback.

4. Typical Daily, Weekly and Project-Cycle Activities

Cadence	Typical activities
Daily	Review priorities/open actions; 3D/2D design; engineering calculations/component selection; quick technical resolution with manufacturing/assembly; supplier questions; project-system updates; design-risk and change tracking.
Weekly	Design review; manufacturing-status meeting; open technical issue/risk review; cost and supply-critical check; test/commissioning preparation; technical mentoring and knowledge sharing.
At project gates	Requirements clarification → concept selection → preliminary design → detailed design → design freeze/release → procurement/manufacture → assembly → verification/test → site commissioning → close-out and lessons learned.
As required	Customer/supplier technical meetings; site measurements; domestic/international travel; nonconformity/root-cause investigation; funded-R&D technical reporting; recruitment technical assessment.

5. Expected Deliverables

- Mechanical requirements and design-input lists
- Concept sketches/layouts and technical option evaluations
- 3D part and assembly models
- 2D manufacturing drawings and controlled revisions
- BOMs, mechanical lists and procurement lists
- Critical component-selection/comparison notes
- Engineering calculations and, where required, simulation/analysis reports
- Design-review packs with decisions and action records
- Mechanical risk analyses and open-technical-issue logs
- Mechanical inputs to test plans, test results and corrective design actions
- Mechanical sections of maintenance/service manuals
- Technical inputs to project cost and improvement activities
- Project/tracking-tool updates and status reporting
- Relevant technical content/evidence for TÜBİTAK, KOSGEB and international funded projects

6. Decision Rights and Boundaries

Area	Senior Design Engineer role	Approval / escalation
Mechanical design approach	Develops options, recommends a solution and manages detailed design within assigned scope.	Critical architecture or project-goal decisions are aligned with project/technical management.

Area	Senior Design Engineer role	Approval / escalation
Drawing / design release	Prepares, checks or technically approves according to the internal authority matrix.	Final release remains subject to MET's document/approval workflow.
Supplier / component	Evaluates technical suitability and recommends options.	Commercial purchase and contract approval remains with the authorized function.
Cost / schedule trade-off	Makes engineering effects visible and proposes options.	Budget/schedule changes are agreed with project management.
People management	Provides mentoring and technical direction; leads teams when formally assigned.	Formal employment decisions remain with company management/HR.

7. Key Interfaces

- Automation / electrical / PLC / robot-programming team: mechanical–electrical interfaces, actuator/sensor placement, service space and integration constraints.
- CNC / machining / prototyping: manufacturing method, tolerances, clamping, tool access and production feedback.
- Assembly and field technicians: assembly sequence, access, maintainability and field nonconformities.
- Procurement / administration: technical specifications, equivalents, supply risk and lead-time criticals.
- Project and company management: scope, schedule, risk, cost, customer changes and escalation of technical decisions.
- Customers and suppliers: technical meetings, requirement clarification, design reviews, site measurements and acceptance/test activities.
- R&D/funding stakeholders: technical work packages, test/validation evidence, reporting and presentations when required.

8. Candidate Profile

8.1 Core / Expected Qualifications

- Bachelor's degree in Mechanical Engineering or a related four-year technical discipline.
- Preferably 4+ years of relevant mechanical/machine-design experience, with evidence of independent design ownership appropriate to senior level.
- Advanced SolidWorks capability, including parts/assemblies, technical drawings, Design Tables, Weldments and Sheet Metal.
- Strong 2D technical-drawing preparation and reading skills, with the discipline to create manufacturing-ready technical information.
- Practical interest and familiarity with special machines, robotic automation, CNC/machine manufacturing or similar industrial systems.
- Good written and spoken technical English; able to participate in technical meetings when required.
- Good working knowledge of Windows, MS Office and core engineering/project tools.

- Detail orientation, work discipline, personal ownership, professional ethics and respectful teamwork.
- Flexibility for project-driven working patterns and domestic/international travel when required.

8.2 Preferred / Advantageous Experience

- Special-machine design and design-to-manufacturing experience.
- Experience with robotic cells, manipulators, fixtures, conveyors or automated assembly equipment.
- Working experience with SolidWorks Simulation, ANSYS or similar analysis tools.
- Hands-on exposure to manufacturing, assembly, commissioning and field problem solving.
- Technical team leadership, mentoring, recruitment assessment, training or performance-feedback experience.
- Cost reduction, quality improvement, standardization or modular-product development.
- Mechanical interface experience with machine-vision or AI-assisted robotic applications, when relevant to the project.
- Experience in R&D projects or funded technical programs such as TÜBİTAK/KOSGEB/EU-type projects.

9. Tools & Engineering Environment

Area	Expectation
Primary CAD	SolidWorks — advanced proficiency expected.
Analysis	SolidWorks Simulation / ANSYS or project-appropriate analysis tools.
Documentation	MS Office and MET's project/document tracking tools.
Manufacturing interface	Close interaction with CNC/machining, sheet/weld fabrication, prototyping and assembly.
Robotics/automation interface	Mechanical interface design with robots, servos, sensors, pneumatic/hydraulic systems and controls.

10. Working Environment at MET & Illustrative Project Families

This is not a desk-only CAD role. The engineer is expected to follow how the design becomes a manufactured, assembled and working system. Depending on project assignment, work may involve robotic assembly/fastening systems, multi-axis process mechanisms, special-purpose automation cells, industrial microwave process systems, polyurethane fixtures, machine-vision-enabled production systems or other R&D/prototype machinery.

Critical expectation for candidates

This is not a "SolidWorks operator" position. You are expected to understand why the design is needed, check manufacturability, own problems discovered in manufacturing, see test results and close the engineering loop.

11. How Success Will Be Assessed

Project-specific numerical targets are set separately by MET. The role is primarily assessed across the following dimensions:

Performance area	Expectation
Technical correctness	Design meets requirements and acceptance criteria; critical technical problems are solved.
Design-release quality	Drawings/BOMs/documents are complete, clear, revision-controlled and manufacturing-ready.
Schedule discipline	Design milestones align with the project plan; schedule risks are raised early.
Manufacturability	Manufacturing/assembly problems are reduced; design reflects real production and service constraints.
Cost awareness	Engineering decisions consider cost and supply impact while protecting technical targets.
Test & issue closure	Test findings are addressed systematically and corrective design actions are closed.
Documentation	Requirements, design, risk, test and maintenance records are prepared on time and remain traceable.
Leadership	Strong technical communication, mentoring, cross-functional collaboration and ownership.

12. First 90 Days — Expected Ramp-Up

Period	Focus	Expected progress
First 30 days	Learn MET products, design practices, project workflow, team interfaces and manufacturing capability.	Read and understand existing designs, project/document flow and complete small-to-medium design tasks with appropriate review.
Days 31–60	Take end-to-end ownership of a defined subsystem/design scope.	More independently manage concept/detail design, drawings/BOM and supplier/manufacturing interfaces.
Days 61–90	Demonstrate senior-role behavior: design review, risk ownership and	Manage a defined mechanical scope with limited direction and present technical

Period	Focus	Expected progress
	closure of manufacturing/test feedback.	decisions with clear rationale.

13. Items to Confirm in Writing Before Offer Acceptance

To avoid role surprises after joining, MET and the candidate should explicitly confirm the following items during the offer stage:

- Exact reporting line and direct manager
- Team structure, any direct reports and mentoring expectations
- Initial project/product family and the first 3–6 months' priority scope
- Primary workplace and expected office/workshop/site split, including any remote-working policy
- Standard working hours, overtime approach and time-off/compensation policy
- Expected domestic/international travel frequency and typical site-assignment duration
- Salary, bonus/incentive structure if applicable, benefits and travel/expense policies
- Probation period, performance-review method and compensation-review cadence
- Computer, software/licenses and technical equipment provided
- Confidentiality, intellectual-property, invention/patent and customer-data obligations
- Health & safety, PPE and customer-site rules
- Training, career development and potential technical-lead/team-lead path

This role profile does not replace an employment contract. Final duties, authority, compensation and employment conditions are governed by the signed contract and company policies.

Candidate Role Confirmation / Aday Rol Teyit Sayfası

Bu sayfa zorunlu bir hukuki form değildir; ileri aşama görüşmede aday ve yönetici arasında rol kapsamını aynı şekilde anladıklarını doğrulamak için kullanılabilecek pratik bir kontrol listesidir.
This is not a legal form; it is a practical discussion checklist for late-stage interviews to confirm that the candidate and hiring manager understand the role in the same way.

✓	Görüşme konusu / Discussion point
☐	Rolün yalnızca CAD değil, konseptten imalat/test/devreye almaya kadar sahiplik gerektirdiğini anlıyorum. / I understand this is not a CAD-only role and includes ownership through manufacturing, testing and commissioning.
☐	Atölye/imalat ve gerektiğinde müşteri sahasında aktif teknik destek beklendiğini anlıyorum. / I understand that active shop-floor and, when required, customer-site engineering support is expected.
☐	Proje takibi, teknik dokümantasyon, risk/test kayıtları ve durum raporlarının rolün parçası olduğunu anlıyorum. / I understand that project tracking, technical documentation, risk/test records and status reporting are part of the role.