

Research Question Examples: Engineering

About this document

This PDF contains 141 **engineering research question examples**, each quoted word for word from one of 74 completed dissertations and theses (2012–2026), grouped into 5 sections. Each question links to the thesis that asked it, so you can read how it was answered. Use them to see what a well-formed engineering research question looks like, then adapt the shape to your own study.

By [Derek Jansen](#) (MBA) · Reviewed by [Eunice Rautenbach](#) (DTech) · Grad Coach · October 2026

Online version: gradcoach.com/research-question-examples/engineering/

© 2026 Grad Coach. Free to share and adapt under [CC BY 4.0](#) with credit to Grad Coach and a link to gradcoach.com/research-question-examples/engineering/. Research questions and thesis titles quoted here remain their authors'; each dissertation keeps its own license.

Contents

Descriptive questions · 65 questions	2
Exploratory questions · 49 questions	8
Causal questions · 17 questions	13
Comparative questions · 6 questions	15
Relational questions · 4 questions	16
How to adapt a question to your own study	17

Descriptive questions

These questions ask what is happening: how much, how often, or what kinds. They describe a situation rather than explain it.

1. What are the most important aspects to be communicated in a city transformation process?

Asked in: [4D in city transformations : systems, processes and actors](#) · Johansson, Tim · Luleå University of Technology · 2012

2. What data is required for implementing Industry 4.0 in production systems?

Asked in: [A New Insight into Data Requirements Between Discrete Event Simulation and Industry 4.0 : A simulation-based case study in the automotive industry supporting operational decisions](#) · Mirzaie Shra, Afroz · Mälardalen University · 2019

3. What UX factors are important in a [Belt-Lock System] and [Auto-Retract Mechanism] for [flywheel resistance training] equipment?

Asked in: [A proposed solution for an Auto-Retract Mechanism & Belt-Lock System prototype for a flywheel resistance training device : To create a durable, sustainable and user centered solution.](#) · Max Sundqvist · Mälardalen University · 2026

4. What critical factors should a work process for the implementation of smart factory technologies include?

Asked in: [A work process supporting the implementation of smart factory technologies developed in smart factory compliant laboratory environment](#) · Sandberg, Pontus · Mälardalen University · 2019

5. What activities can this project identify to synthesize an additive design process in constructing critical structures for Additive Manufacturing (AM)?

Asked in: [Additive Design Process for Critical Structures: Attempt study](#) · Prathan, Kanthee · Mälardalen University · 2022

6. What are the possible value components to include in the additive design process that would contribute to innovation concerning lead time, weight, and mass customization?

Asked in: [Additive Design Process for Critical Structures: Attempt study](#) · Prathan, Kanthee · Mälardalen University · 2022

7. What is the cooling power per m2 delivered by the cooling equipment in the two different ICT rooms at Ericsson?

Asked in: [AI-assisted analysis of ICT-centre cooling : Using K-means clustering to identify cooling patterns in water-cooled ICT rooms](#) · Jigsved, Johan · Linköping University · 2023

8. What operational patterns can be found using a suitable clustering algorithm to process and compare data for [Liquid Cooling Package] at two ICT-rooms?

Asked in: [AI-assisted analysis of ICT-centre cooling : Using K-means clustering to identify cooling patterns in water-cooled ICT rooms](#) · Jigsved, Johan · Linköping University · 2023

9. How much does the combined standard uncertainty in the assessed fatigue force amount to?

Asked in: [Analysis of uncertainties in fatigue load assessment : a study on one Kaplan hydro turbine during start operation](#) · Annica Gustafsson · KTH Royal Institute of Technology · 2019

10. What changes need to be done in the shop-floor to implement Digital Twin?

Asked in: [Assessment of How Digital Twin Can Be Utilized in Manufacturing Companies to Create Business Value](#) · Bestjak, Linnea · Mälardalen University · 2020

11. What are the benefits of industrial process plant Digital Twins for companies in process industries?

Asked in: [Benefits & Challenges of Process Plant Digital Twins in Process Industries : A Single Case Study Approach in the Mineral Processing Industry](#) · Jensen, Tobias · Halmstad University · 2022

12. What are the challenges that companies will face with industrial process plant Digital Twins in process industries?

Asked in: [Benefits & Challenges of Process Plant Digital Twins in Process Industries : A Single Case Study Approach in the Mineral Processing Industry](#) · Jensen, Tobias · Halmstad University · 2022

13. What are the biggest challenges that OVK technicians face in their daily work?

Asked in: [Challenges and Improvement Measures in the Work of OVK Technicians](#) · Kevin Hasic Huskic · Malmö University · 2025

14. Based on the challenges identified by OVK technicians, what practical and strategic improvement measures can be implemented to improve the OVK process?

Asked in: [Challenges and Improvement Measures in the Work of OVK Technicians](#) · Kevin Hasic Huskic · Malmö University · 2025

15. Can we learn and represent the shape, material, and part quality transformation capabilities of discrete manufacturing processes from design and manufacturing data as a latent probability distribution?

Asked in: [Deep Learning Based Manufacturing Capability Modeling for Process Planning Automation](#) · Yan, Xiaoliang · Georgia Institute of Technology · 2026

16. Can we enable efficient automated search of manufacturers based on a computed score for the match between the desired part and the manufacturer's capabilities?

Asked in: [Deep Learning Based Manufacturing Capability Modeling for Process Planning Automation](#) · Yan, Xiaoliang · Georgia Institute of Technology · 2026

17. What factors should be considered when designing the battery modules, rack, and auxiliary systems to achieve the highest energy density of a battery pack for construction equipment?

Asked in: [Design of a swappable battery pack](#) · Carl Blom · Mälardalen University · 2024

18. What dimensions should be considered when assessing the maturity of Industry 4.0?

Asked in: [Develop a framework and assessing the maturity level to facilitate the transition towards Industry 4.0](#) · Bäcklin, Josefine · Mälardalen University · 2019

19. Which aspects should be taken into account when designing industrial rotary encoders with inductive measurement technique on which the functional safety increases?

Asked in: [Development and evaluation of a functional safety encoder : Concretisation and further development of a patented solution aiming to detect blocked bearings](#) · Bojnell, Kim · Mälardalen University · 2023

20. Which conceptual solutions of a material handling system for a high-pressure processing machine can be developed?

Asked in: [Development of a material handling system for a high high-pressure processing machine: A study of conceptual solutions](#) · Sjöström, Elvira · Mälardalen University · 2023

21. Would it be possible to detect stroke via [Electrical Bioimpedance] as early as in the acute and sub-acute phase?

Asked in: [Electrical Bioimpedance Cerebral Monitoring : From Hypothesis and Simulation to First Experimental Evidence in Stroke Patients](#) · Seyed Reza Atefi · KTH Royal Institute of Technology · 2015

22. Which challenges arise when collaborating on digital platforms in the manufacturing industry?

Asked in: [Enabling Successful Collaboration on Digital Platforms in the Manufacturing Industry : A Study of Digital Twins](#) · Andersson, Ebba · Luleå University of Technology · 2019

23. To which degree can carbon dioxide emissions and energy usage be reduced by changing the materials in an [Asynchronous motor] rotor?

Asked in: [Environmental analysis of asynchronous motors : A case study on the rotor and its materials](#) · Jansson, Hanna · Mälardalen University · 2023

24. What are suitable materials and production methods to produce an [additively manufactured tooling]?

Asked in: [Evaluating Suitable Materials and the Effects of Integrated Cooling Channels in Additively Manufactured Polymer Moulds for use in Injection Moulding](#) · Emil, Johansson · Mälardalen University · 2025

25. What problems in existing manual workstations can be identified, regarding work activities and material presentation?

Asked in: [Framework of Standardized Workstations for a Mixed-model Assembly Line : Material Presentation and Work Activities from a Time Efficient and Ergonomic Perspective](#) · Lind, Julia · Jönköping University · 2018

26. What can be considered regarding operators' work activities in creation of standardized workstations for a mixed-model assembly line?

Asked in: [Framework of Standardized Workstations for a Mixed-model Assembly Line : Material Presentation and Work Activities from a Time Efficient and Ergonomic Perspective](#) · Lind, Julia · Jönköping University · 2018

27. What can facilitate the work performance and ergonomics of operators when designing material presentation for standardized workstations for a mixed-model assembly line?

Asked in: [Framework of Standardized Workstations for a Mixed-model Assembly Line : Material Presentation and Work Activities from a Time Efficient and Ergonomic Perspective](#) · Lind, Julia · Jönköping University · 2018

28. What are the values of system integration among maintenance and production decisions in measuring machine availability?

Asked in: [Importance of system integration on the results of measuring performance – A case study in a manufacturing company](#) · Davidova, Gizem Plamenova · Mälardalen University · 2022

29. Which parameters or indicators can be taken into consideration to calculate machine availability among several production units in a manufacturing company?

Asked in: [Importance of system integration on the results of measuring performance – A case study in a manufacturing company](#) · Davidova, Gizem Plamenova · Mälardalen University · 2022

30. What factors contributing to inefficiencies in a production line can be identified using [Value Stream Mapping]?

Asked in: [Improving Production Lines using Value Stream Mapping](#) · Samiha Huda · Mälardalen University · 2025

31. Is it possible to form the planning objectives Investment Scale, Investment Timing and Dispatch Adaptability as part of optimising energy capacity size for new [Battery Energy Storage System] installation seeking maximum profit?

Asked in: [Integrating project planning objectives as part of sizing battery energy storage systems](#) · Kelly, Joseph J. · University College Cork · 2022

32. Are there any circumstances where the inclusion of planning objectives Investment Scale, Investment Timing and Dispatch Adaptability as part of [Battery Energy Storage System] sizing helps overcome shortcomings of existing sizing approaches?

Asked in: [Integrating project planning objectives as part of sizing battery energy storage systems](#) · Kelly, Joseph J. · University College Cork · 2022

33. What are the challenges in implementing digital quality assurance tools in manufacturing SMEs?

Asked in: [Introduction of digital measurement system in manufacturing SME companies : MeasurLink](#) · Khazzaka, Roy · KTH Royal Institute of Technology · 2020

34. What constitutes waste when producing digital, customized products, and to what extent can the waste be eliminated?

Asked in: [Modifying Lean Production for Implementation in Production of Digital, Customized Products](#) · Mideklint, Susanne · Linköping University · 2014

35. Which lean concepts and tools are suitable to apply in the production of digital, customized products?

Asked in: [Modifying Lean Production for Implementation in Production of Digital, Customized Products](#) · Mideklint, Susanne · Linköping University · 2014

36. What steps are necessary for initial implementation of lean production for production of digital, customized products, and how should they be prioritized?

Asked in: [Modifying Lean Production for Implementation in Production of Digital, Customized Products](#) · Mideklint, Susanne · Linköping University · 2014

37. How strongly do the additives adhere to the substrate's surface?

Asked in: [Molecular dynamic characterization of lubricant additives: solubility, diffusion, sorption and friction behavior](#) · Kruse, Lars Benedikt · University of Freiburg · 2026

38. What are the essential prerequisites for quality assurance through in-line failure detection by vibration analysis in the machining of splines?

Asked in: [Quality Assurance through In-line Failure Detection by Vibration Analysis](#) · Gomero Paz, Andrés Leonardo · Mälardalen University · 2023

39. How suitable is the use of vibration measurements in identifying and sorting out poor quality in the specific machining process of splines?

Asked in: [Quality Assurance through In-line Failure Detection by Vibration Analysis](#) · Gomero Paz, Andrés Leonardo · Mälardalen University · 2023

40. What challenges may arise when applying a deconstructability index in the design process?

Asked in: [Quantifiable deconstructability : The next step towards a circular construction industry?](#) · Adrian Hultmark · Luleå University of Technology · 2025

41. What opportunities can be gained by applying a deconstructability index in the design process?

Asked in: [Quantifiable deconstructability : The next step towards a circular construction industry?](#) · Adrian Hultmark · Luleå University of Technology · 2025

42. What barriers and enablers are there when integrating [Real-time Locating Systems] and [Enterprise Resource Planning]?

Asked in: [Real-Time Locating System \(RTLS\) Applicability for ERP Integration : Guidelines for Applicability and Barriers and Enablers for RTLS and ERP Integration](#) · Åslin, Rasmus · Jönköping University · 2022

43. Which hardware / software technologies and tools are necessary to implement a software architecture for the transition to [Industry 4.0]?

Asked in: [SUPPORTING COMPANIES IN THEIR DIGITAL TRANSITION TO SMART MANUFACTURING SYSTEMS](#) · DE MARTINO, GIUSEPPE · University of Milan · 2025

44. What are the challenges of developing a HMLV production cell?

Asked in: [Supporting the development of a HMLV production cell](#) · Sebastian Häll · Mälardalen University · 2021

45. What are the critical factors to consider when developing a HMLV production cell?

Asked in: [Supporting the development of a HMLV production cell](#) · Sebastian Häll · Mälardalen University · 2021

46. How applicable are the success factors from the [Project Implementation Profile] tool in delivering successful modern construction projects?

Asked in: [The project implementation profile's applicability to the modern construction industry](#) · Moses Tinashe Chiropa · University of Cape Town · 2019

47. Are there other success factors that may be considered for inclusion in the [Project Implementation Profile] tool for modern construction projects?

Asked in: [The project implementation profile's applicability to the modern construction industry](#) · Moses Tinashe Chiropa · University of Cape Town · 2019

48. How can a traceability framework for glass be structured to facilitate its collection and reuse?

Asked in: [The reuse of glass: tackling the technical, environmental and logistical challenges](#) · ROTA, ANGELICA · Politecnico di Bari · 2026

49. What combination of physiological measures can be used to monitor vigilance?

Asked in: [Vigilance Decrement Measurement, Prediction, and Intervention Design in Safety-Critical Environments](#) · Prendez, David · University of Washington · 2026

50. What modeling features and strategies can be used to predict vigilance decrement?

Asked in: [Vigilance Decrement Measurement, Prediction, and Intervention Design in Safety-Critical Environments](#) · Prendez, David · University of Washington · 2026

51. What prerequisites must exist to be able to implement Virtual assembly at the early stages of product development?

Asked in: [Virtual assembly in the early stages of the product development process](#) · Bergman, Johnny · Mälardalen University · 2020

52. What can be tested using virtual assembly in VR at the early stages of product development?

Asked in: [Virtual assembly in the early stages of the product development process](#) · Bergman, Johnny · Mälardalen University · 2020

53. What values does VR bring when used for virtual assembly?

Asked in: [Virtual Reality within a Virtual Assembly process: Its uses and values](#) · Erlands, Nils · Mälardalen University · 2022

54. What activities are important when using VR for virtual assembly?

Asked in: [Virtual Reality within a Virtual Assembly process: Its uses and values](#) · Erlands, Nils · Mälardalen University · 2022

55. Which risk factors contribute to VOC emissions potentially limiting production in industrial coating processes, and what measures can be identified to manage these?

Asked in: [VOC Emissions as a Constraint in Coating Processes: Impact on Production Capacity](#) · Bernhardsson-Sandstén, Sebastian · Mälardalen University · 2026

56. What factors can lead to balancing losses in a mixed-model assembly line?

Asked in: [Balansoptimering av monteringslina med mixade produkter : En fallstudie](#) · Al-Said, Dana · Mälardalen University · 2021

57. What should the structure and workflow look like, and what actions are required to ensure successful implementation?

Asked in: [Digital simulering av servicemetoder : Utveckling och implementering av digital simuleringsprocess för fordonsserviceinformation](#) · Kuhn, Nora Christina · KTH Royal Institute of Technology · 2025

58. What factors impact the decision between functional and cellular layout?

Asked in: [Förbättring av materialflöden genom konvertering av produktionslayout](#) · Holmdahl, Björn · Jönköping University · 2022

59. Which organisational, technical, and practical barriers must be managed for reused brick to become a realistic and climate-beneficial option in Swedish construction projects?

Asked in: [Från rivning till återbruk : En klimat- och logistikstudie av tegel i cirkulära byggprojekt](#) · Brink, Filip · Luleå University of Technology · 2026

60. Once a spare part has been identified as suitable for additive manufacturing, what technical steps are required to proceed?

Asked in: [Identifiering och utvärdering av reservdelar för additiv tillverkning: kriterier och processteg](#) · Edwin Lindberg · Mälardalen University · 2025

61. What are the primary guidelines for key tasks to facilitate the adoption of additive manufacturing for low-demand spare parts?

Asked in: [Identifiering och utvärdering av reservdelar för additiv tillverkning: kriterier och processteg](#) · Edwin Lindberg · Mälardalen University · 2025

62. What are the optimal spray arc pulse parameters in GMAW when aiming for deep fusion of weld?

Asked in: [Kuumakaaripulssiparametrien optimointi seostamattoman teräksen MAG-hitsauksessa](#) · Joonas Karhunen · LUT University · 2020

63. What is the optimal arc voltage of GMAW spray arc mode when aiming for deep weld fusion?

Asked in: [Kuumakaaripulssiparametrien optimointi seostamattoman teräksen MAG-hitsauksessa](#) · Joonas Karhunen · LUT University · 2020

64. Where in the insourcing process is it relevant to include DFM?

Asked in: [Produktanpassning vid insourcing av bearbetning : Tillverkningsanpassad konstruktion och insourcing i produktutvecklingsprocessen](#) · David Karlsson · Mälardalen University · 2017

65. What are the main reasons that producing companies use [Open Innovation] in their product development process and what risks may occur using [Open Innovation]?

Asked in: [Utveckling av en fixtur genom Open Innovation](#) · Al Hakim, Hoda · Mälardalen University · 2021

Exploratory questions

These questions ask how or why something happens, usually where little research exists yet. They are common in qualitative studies built on interviews or observation.

66. How can this information be visualized and communicated to stakeholders to support a transparent decision-making process?

Asked in: [4D in city transformations : systems, processes and actors](#) · Johansson, Tim · Luleå University of Technology · 2012

67. How is a smart factory technology determined ready to be implemented into a full-scale production system?

Asked in: [A work process supporting the implementation of smart factory technologies developed in smart factory compliant laboratory environment](#) · Sandberg, Pontus · Mälardalen University · 2019

68. How can we estimate strains on embedded rebars with the application of machine learning regression, employing a hybrid-learning approach?

Asked in: [An Algorithmic Framework for Intelligent Concrete Structural Defects Detection and Classification](#) · Mirzazade, Ali · Luleå University of Technology · 2023

69. How can we bridge the gap between defect detection and classification to achieve effective defect classification?

Asked in: [An Algorithmic Framework for Intelligent Concrete Structural Defects Detection and Classification](#) · Mirzazade, Ali · Luleå University of Technology · 2023

70. How can [Digital Twin] be beneficial to increase business value in a manufacturing company?

Asked in: [Assessment of How Digital Twin Can Be Utilized in Manufacturing Companies to Create Business Value](#) · Bestjak, Linnea · Mälardalen University · 2020

71. What improvement measures can be derived from the identified factors, and how can their impact on load factor, transportation cost and implementation feasibility be evaluated?

Asked in: [Beyond Half-Empty : Optimization of Load Factor for Replenishments to Regional Warehouses](#) · Mohammad, Jad Ari · Mälardalen University · 2026

72. What is the method to create a coherent high-level [user requirement specification] for [Manufacturing Execution System]?

Asked in: [Defining user requirement specifications for manufacturing execution system in pharmaceutical industry - A case study for a pharmaceutical company](#) · Nguyen, Thao · Aalto University · 2022

73. How can a load-bearing automotive part be designed for [Wire-Arc Additive Manufacturing]-based serial production?

Asked in: [Design for Wire-Arc Additive Manufacturing : A feasibility study of WAAM-based serial production for load-bearing automotive components](#) · Jesper Malm · Mälardalen University · 2026

74. How can the heat of the mechanical seal's wear face be measured while operating in the CultureOne machine?

Asked in: [Determining temperature and drivers of heat in mechanical face seals](#) · Carlén, Vincent · Mälardalen University · 2024

75. How could the maturity assessment of Industry 4.0 be performed?

Asked in: [Develop a framework and assessing the maturity level to facilitate the transition towards Industry 4.0](#) · Bäcklin, Josefine · Mälardalen University · 2019

76. How can a mechanical solution be designed to enable the detection of blocked bearings in a rotary inductive encoder and thereby increase the functional safety of a control system?

Asked in: [Development and evaluation of a functional safety encoder : Concretisation and further development of a patented solution aiming to detect blocked bearings](#) · Bojnell, Kim · Mälardalen University · 2023

77. How can collaboration challenges on digital platforms in the manufacturing industry be managed?

Asked in: [Enabling Successful Collaboration on Digital Platforms in the Manufacturing Industry : A Study of Digital Twins](#) · Andersson, Ebba · Luleå University of Technology · 2019

78. How can the measurement of Levels of Automation contribute to an improved competitiveness of the wood processing industry's production processes?

Asked in: [Examining Levels of Automation in the Wood Processing Industry - A case study](#) · Schneider, Christian · Jönköping University · 2016

79. How to adapt selected TopOpt method(s) such that geometry of the topology optimized design and that of the additively manufactured part are consistent with each other?

Asked in: [Extensions of topology optimization for additive manufacturing](#) · Xian, Yeming · Georgia Institute of Technology · 2026

80. What improvements can be recommended to optimize a production line using [Value Stream Mapping]?

Asked in: [Improving Production Lines using Value Stream Mapping](#) · Samiha Huda · Mälardalen University · 2025

81. How can the long-haulage trucks' usage pattern be used to identify a transition phase?

Asked in: [Indicators of Phase Transition within the Vehicle's Lifecycle : A Case Study of Scania](#) · Persson, Vickie · Linköping University · 2015

82. How can digital tools be implemented to assist the quality assurance process of manufacturing SMEs?

Asked in: [Introduction of digital measurement system in manufacturing SME companies : MeasurLink](#) · Khazzaka, Roy · KTH Royal Institute of Technology · 2020

83. How can process improvements in an industrial paint shop contribute to increased energy efficiency?

Asked in: [Process Improvements and System Changes : The Path to Sustainable Energy Efficiency](#) · Elina Ek · KTH Royal Institute of Technology · 2025

84. How is deconstructability taken into account in Swedish building design?

Asked in: [Quantifiable deconstructability : The next step towards a circular construction industry?](#) · Adrian Hultmark · Luleå University of Technology · 2025

85. How can a measuring paddle be rotated and the flow resistance be measured in a cost-effective way?

Asked in: [Simplified rheology meter for concrete](#) · Pirkhdrie, Awara · Malmö University · 2022

86. How can such an architecture serve to build intelligent manufacturing systems with adherence to a set of [Industry 4.0] rules, standards, regulations, and guidelines that govern the textile sector?

Asked in: [SUPPORTING COMPANIES IN THEIR DIGITAL TRANSITION TO SMART MANUFACTURING SYSTEMS](#) · DE MARTINO, GIUSEPPE · University of Milan · 2025

87. How can the development of a HMLV production cell be supported?

Asked in: [Supporting the development of a HMLV production cell](#) · Sebastian Häll · Mälardalen University · 2021

88. How should the process of conversion from diesel to methanol on [crew transfer vessel] vessels be carried out?

Asked in: [Sustainable conversion of crew transfer vessel: a study on conversion from diesel to methanol operation in maritime transport](#) · Bousquet, Liv · University of Borås · 2024

89. How can glass components be collected and disassembled for reuse?

Asked in: [The reuse of glass: tackling the technical, environmental and logistical challenges](#) · ROTA, ANGELICA · Politecnico di Bari · 2026

90. How can pre-demolition audits be tailored to support the collection and re-use of glass from buildings?

Asked in: [The reuse of glass: tackling the technical, environmental and logistical challenges](#) · ROTA, ANGELICA · Politecnico di Bari · 2026

91. How does the use of a framework contribute to the development of a new production system?

Asked in: [Usability Evaluation of a Production System Development Framework : A Meta-Study Performed on the Use of a Production System Development Framework in the Development of a New Production System at Xylem](#) · Arnesson, Fredrik · Jönköping University · 2012

92. How can discrete event simulation be used as a tool to identify time wastes and create efficiency in a packaging station?

Asked in: [Using discrete event simulation : Improving efficiency and eliminating nonvalue added work](#) · Camilla Janius · Mälardalen University · 2016

93. How can a discrete event simulation model be developed to be used in the improvement of manufacturing processes?

Asked in: [Using Discrete-Event Simulation for Bottleneck Identification and Formulation of Future-State Scenarios: A Case Study about painting shop floor](#) · Ahmad Obiedallah · Mälardalen University · 2024

94. How can a simulation model be used for bottleneck identification, and what are the potential enhancements?

Asked in: [Using Discrete-Event Simulation for Bottleneck Identification and Formulation of Future-State Scenarios: A Case Study about painting shop floor](#) · Ahmad Obiedallah · Mälardalen University · 2024

95. What types of interventions can be used to maintain vigilance in a sustainable manner?

Asked in: [Vigilance Decrement Measurement, Prediction, and Intervention Design in Safety-Critical Environments](#) · Prendez, David · University of Washington · 2026

96. How can a final drive be redesigned to use a wet clutch instead of a dog clutch, while fitting into a predetermined axle casing?

Asked in: [Wheel Loader Final Drive Design](#) · Fanny Bäcksholm · Mälardalen University · 2026

97. How is buildings' adaptability defined, understood and positioned in previous research and international frameworks, with particular focus on the EU framework Level(s)?

Asked in: [Att projektera för förändrade behov : En studie av Level\(s\) indikator 2.3 i svensk kontext](#) · Helander, Joel · Luleå University of Technology · 2026

98. How can Level(s) indicator 2.3 structure the assessment of adaptability when applied to a specific Swedish new production project?

Asked in: [Att projektera för förändrade behov : En studie av Level\(s\) indikator 2.3 i svensk kontext](#) · Helander, Joel · Luleå University of Technology · 2026

99. What implications may emerge in the interaction between the indicator's assessment logic and Swedish design practice?

Asked in: [Att projektera för förändrade behov : En studie av Level\(s\) indikator 2.3 i svensk kontext](#) · Helander, Joel · Luleå University of Technology · 2026

100. How can a mixed-model assembly line be balanced without leading to other types of losses?

Asked in: [Balansoptimering av monteringslina med mixade produkter : En fallstudie](#) · Al-Said, Dana · Mälardalen University · 2021

101. How can a digital testing team be integrated into the service method development process?

Asked in: [Digital simulering av servicemetoder : Utveckling och implementering av digital simuleringsprocess för fordonsserviceinformation](#) · Kuhn, Nora Christina · KTH Royal Institute of Technology · 2025

102. How can planning be done to increase the utilization of test sites in a test facility?

Asked in: [Förbättra ett testrums potential med hjälp av planering, visualisering och robusta rutiner](#) · Dag, Victoria · Mälardalen University · 2023

103. How can the material flows become more efficient through the conversion from a functional-layout to a cellular-layout?

Asked in: [Förbättring av materialflöden genom konvertering av produktionslayout](#) · Holmdahl, Björn · Jönköping University · 2022

104. How can potential spare parts be identified as suitable for additive manufacturing based on their physical and functional properties?

Asked in: [Identifiering och utvärdering av reservdelar för additiv tillverkning: kriterier och processteg](#) · Edwin Lindberg · Mälardalen University · 2025

105. How can wastes be reduced with the help of Lean methods in a distribution center?

Asked in: [Minska slöserier med hjälp av verktyg inom Lean : Fallstudie på Omlastningscentralen i Eskilstuna](#) · Bergqvist, Julia · Mälardalen University · 2021

106. How could a modular heater be designed to enable customer adoption without time-consuming development processes?

Asked in: [Modulär Elbilsvärmare](#) · Beiertz, Fredrik · Mälardalen University · 2018

107. How can companies in the manufacturing industry use Lean tools to work with improvements?

Asked in: [Nulägesanalys och identifiering av slöseri](#) · Fleismark, Linda · Mälardalen University · 2018

108. What characterizes a reduction of engineering uncertainties through product-based structures?

Asked in: [Standardisering av layout routing med hjälp av produktutveckling och processoptimering: En konceptstudie genomförd på Quintus Technologies AB : Examensarbete 30 hp, avancerad nivå](#) · Haddad, Robert · Mälardalen University · 2023

109. How can standardized layout modules ensure the reduction of engineering uncertainties throughout the product-development process?

Asked in: [Standardisering av layout routing med hjälp av produktutveckling och processoptimering: En konceptstudie genomförd på Quintus Technologies AB : Examensarbete 30 hp, avancerad nivå](#) · Haddad, Robert · Mälardalen University · 2023

110. How can a hysteresis curve based on frequency input be found by performing physical testing?

Asked in: [Testutrustning för fysisk testning av vibrationsisolator](#) · Johansson, Markus · KTH Royal Institute of Technology · 2021

111. How can a test rig be designed to test and measure the material properties of a rubber component in order to parametrize the material?

Asked in: [Testutrustning för fysisk testning av vibrationsisolator](#) · Johansson, Markus · KTH Royal Institute of Technology · 2021

112. How are the contractor's possibilities for achieving successful and profitable projects affected in design-build projects?

Asked in: [Totalentreprenader ur en anläggningsentreprenörs perspektiv : Framgångsfaktorer och fallgropar](#) · Johan Sönnert · Luleå University of Technology · 2016

113. How does the rest of the client's procurement strategy affect the design-build contractor?

Asked in: [Totalentreprenader ur en anläggningsentreprenörs perspektiv : Framgångsfaktorer och fallgropar](#) · Johan Sönnert · Luleå University of Technology · 2016

114. How should contractors adapt their project organizations, in terms of expertise and roles, to meet the changing role towards the client?

Asked in: [Totalentreprenader ur en anläggningsentreprenörs perspektiv : Framgångsfaktorer och fallgropar](#) · Johan Sönnert · Luleå University of Technology · 2016

Causal questions

These questions ask whether one thing causes a change in another. Answering them usually takes an experiment or a careful design that rules out other explanations.

115. How does the uncertainty in the assessed fatigue force affect the fatigue damage?

Asked in: [Analysis of uncertainties in fatigue load assessment : a study on one Kaplan hydro turbine during start operation](#) · Annica Gustafsson · KTH Royal Institute of Technology · 2019

116. Which operational and packaging factors influence bin load factor, and consequently, the transportation cost in the studied system?

Asked in: [Beyond Half-Empty : Optimization of Load Factor for Replenishments to Regional Warehouses](#) · Mohammad, Jad Ari · Mälardalen University · 2026

117. How does the crosslinking concept affect properties of cartonboard when applied?

Asked in: [Crosslinked Cartonboard - Challenges and possibilities](#) · Malin Elvin · Mälardalen University · 2022

118. Does stroke modify the electrical properties of brain tissue in a way that is detectable via [Electrical Bioimpedance]?

Asked in: [Electrical Bioimpedance Cerebral Monitoring : From Hypothesis and Simulation to First Experimental Evidence in Stroke Patients](#) · Seyed Reza Atefi · KTH Royal Institute of Technology · 2015

119. How does the changing of the material in the [Asynchronous motor] rotor affect the challenges with recycling it?

Asked in: [Environmental analysis of asynchronous motors : A case study on the rotor and its materials](#) · Jansson, Hanna · Mälardalen University · 2023

120. What are the effects of using integrated cooling channels in [additively manufactured tooling]?

Asked in: [Evaluating Suitable Materials and the Effects of Integrated Cooling Channels in Additively Manufactured Polymer Moulds for use in Injection Moulding](#) · Emil, Johansson · Mälardalen University · 2025

121. Do the additives have a significant impact on the lubricant's viscosity?

Asked in: [Molecular dynamic characterization of lubricant additives: solubility, diffusion, sorption and friction behavior](#) · Kruse, Lars Benedikt · University of Freiburg · 2026

122. How can different operational resilience strategies influence the throughput of the new production system?

Asked in: [Operational Resilience in Production Systems : A Strategic Analysis using DES Simulation](#) · Borg, Simon · KTH Royal Institute of Technology · 2024

123. How does occupant behaviour affect the energy consumption at a retail facility?

Asked in: [Reducing the Energy Consumption within the Retail Industry : A Case Study of Scania, Prestons](#) · Jacob Blixt · Uppsala University · 2019

124. What systemic interdependencies exist between [supplementary cementitious materials] concrete's mechanical properties and site construction methods, and how do these interactions influence the cradle-to-practical-completion performance of [supplementary cementitious materials] concrete?

Asked in: [Scm Concrete Construction: Economic And Environmental Performance Quantification, Optimisation And Uncertainty Analysis](#) · Chen, Shiwei · Luleå University of Technology · 2025

125. What influence do weather-induced uncertainties have on the trade-offs between environmental benefits and economic constraints of [supplementary cementitious materials] concrete construction practice across cradle to practical completion, and how should site construction methods be dynamically adapted to optimize these objectives under variable conditions?

Asked in: [Scm Concrete Construction: Economic And Environmental Performance Quantification, Optimisation And Uncertainty Analysis](#) · Chen, Shiwei · Luleå University of Technology · 2025

126. What is the impact of implementing a new layout with industrial palletizer robotics in manufacturing companies' internal logistics - specifically the goods receipt process in terms of robot Overall Equipment Effectiveness (OEE), throughput, and [Work in Progress]?

Asked in: [Using discrete-event simulation to enable implementation of picking and palletizing robots: A case study](#) · Trykoz, Volodymyr · Mälardalen University · 2023

127. How do limitations in allowed VOC emissions affect production capacity in industrial paint processes?

Asked in: [VOC Emissions as a Constraint in Coating Processes: Impact on Production Capacity](#) · Bernhardsson-Sandstén, Sebastian · Mälardalen University · 2026

128. How does the switch from a dog clutch to a wet clutch affect the design of the final drive?

Asked in: [Wheel Loader Final Drive Design](#) · Fanny Bäcksholm · Mälardalen University · 2026

129. Why and how pulse parameters of spray arc mode in GMAW affect on weld bead formation?

Asked in: [Kuumakaaripulssiparametrien optimointi seostamattoman teräksen MAG-hitsauksessa](#) · Joonas Karhunen · LUT University · 2020

130. Why and how arc voltage affects weld bead formation in GMAW?

Asked in: [Kuumakaaripulssiparametrien optimointi seostamattoman teräksen MAG-hitsauksessa](#) · Joonas Karhunen · LUT University · 2020

131. Which factors in the modular approach have the main impact on the heaters function?

Asked in: [Modulär Elbilsvärmare](#) · Beiertz, Fredrik · Mälardalen University · 2018

Comparative questions

These questions compare two or more groups or settings, such as two schools or two teaching methods, to see whether they differ.

132. How could a [Belt-Lock System] and [Auto-Retract Mechanism] be designed for [flywheel resistance training] equipment to have increased durability, UX and decreased environmental impact compared to a previous solution?

Asked in: [A proposed solution for an Auto-Retract Mechanism & Belt-Lock System prototype for a flywheel resistance training device : To create a durable, sustainable and user centered solution.](#) · Max Sundqvist · Mälardalen University · 2026

133. What are the differences in the operating environment between the laboratory and the full-scale production system?

Asked in: [A work process supporting the implementation of smart factory technologies developed in smart factory compliant laboratory environment](#) · Sandberg, Pontus · Mälardalen University · 2019

134. What are the metallurgical benefits of an [Additive Manufacturing] produced product in comparison to a Sand Casted product for excavator bucket teeth?

Asked in: [Challenges and Metallurgical Benefits of Implementing Metal Additive Manufacturing : A Case Study on Excavator Bucket Teeth Comparing Sand Casting with Additive Manufacturing](#) · Thunberg, Michael · Mälardalen University · 2023

135. How does part feasibility differ when designing for [Wire-Arc Additive Manufacturing] compared to traditional manufacturing?

Asked in: [Design for Wire-Arc Additive Manufacturing : A feasibility study of WAAM-based serial production for load-bearing automotive components](#) · Jesper Malm · Mälardalen University · 2026

136. What are the challenges and advantages of each designed concept in terms of automation and implementation?

Asked in: [Development of a material handling system for a high high-pressure processing machine: A study of conceptual solutions](#) · Sjöström, Elvira · Mälardalen University · 2023

137. Which logistics activities and challenges are specific to reused building materials in comparison with newly manufactured materials?

Asked in: [Från rivning till återbruk : En klimat- och logistikstudie av tegel i cirkulära byggprojekt](#) · Brink, Filip · Luleå University of Technology · 2026

Relational questions

These questions ask whether two things tend to go together, such as study time and exam results, without claiming that one causes the other.

- 138.** Which input parameters, that are subject to a degree of uncertainty, contribute the most to the combined standard uncertainty in the assessed fatigue force?

Asked in: [Analysis of uncertainties in fatigue load assessment : a study on one Kaplan hydro turbine during start operation](#) · Annica Gustafsson · KTH Royal Institute of Technology · 2019

- 139.** Which parameters have the highest significance for generated heat in the single-use mechanical seal?

Asked in: [Determining temperature and drivers of heat in mechanical face seals](#) · Carlén, Vincent · Mälardalen University · 2024

- 140.** What critical trade-offs arise when optimizing [supplementary cementitious materials] concrete configurations across environmental benefits and economic constraints, and how can these trade-offs be systematically prioritized to avoid sub-optimisation?

Asked in: [Scm Concrete Construction: Economic And Environmental Performance Quantification, Optimisation And Uncertainty Analysis](#) · Chen, Shiwei · Luleå University of Technology · 2025

- 141.** How does an insourcing process correlate with theoretical design processes and with Volvo's product development process?

Asked in: [Produktanpassning vid insourcing av bearbetning : Tillverkningsanpassad konstruktion och insourcing i produktutvecklingsprocessen](#) · David Karlsson · Mälardalen University · 2017

How to adapt a question to your own study

Every question here was asked by someone else, about their own setting. These four steps turn one into a question that is yours.

- 1. Pick the shape, not the wording.** Notice whether the question compares, explores, explains or measures. That shape is what transfers to your study.
Recommended reading: [How to write a research question](#)
- 2. Swap in your own population and setting.** Change who, where and when, and check the question still makes sense.
Recommended reading: [How to find a research gap](#)
- 3. Check it fits your method.** A "how" or "why" question usually points to qualitative work; "how much" or "is there a relationship" to quantitative.
Recommended reading: [Qualitative vs quantitative research](#)
- 4. Line up your aims, objectives and questions.** Your committee will check that they agree.
Recommended reading: [Research aims, objectives and questions](#)

Do this with two or three questions and compare them: the one you can actually answer with the time and access you have is usually the right one.