



## 30 Credits – FEM (Finite Element Method) Analysis of Bolted Joints

Scania genomgår nu en transformation från att vara en leverantör av lastbilar, bussar och motorer till en leverantör av kompletta och hållbara transportlösningar.

Scania is now undergoing a transformation from being a supplier of trucks, buses and engines to a supplier of complete and sustainable transport solutions.

In order to ensure that continuous improvements are achieved and that waste is eliminated during the development of new products, extensive digital and physical testing is performed. Finite Element Analysis (FEA) and correlation with physical testing of chassis components is an integral part of Scania's product development.

A Master's Thesis completed at Scania is an excellent way of experiencing and contributing to a dynamic research and development organisation whilst establishing a broad professional network.

### Background

Bolts are one of the most common fastening elements on a truck. The durability and robustness of bolts are therefore essential for the operation and safety of the vehicle and the community. Numerous simulation methods exist to evaluate the durability of bolts. However, there are cases where the predictions from simulations do not fully align with the results from test.

### Aim:

To investigate, identify and document, in the form of a Master's Thesis written in English, the shortcomings and potential improvements to the existing simulation methods used to evaluate bolted joints.

### Assignment: Correlate simulation results with physical test data

- Investigate the sensitivity of the simulation results to a number of parameters with the aim to improve the correlation
- Identify and investigate possible improvements to the simulation methods

### Education:

Master of Engineering or Science student with an interest in structural and dynamic FEA analysis.

Number of students: 1

Start: January 2019

Duration: 20 weeks, full time

### Contact persons and supervisors:

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**Application:**

**Enclose CV, cover letter and academic transcripts.**

**About the job**

**Title:** 30 Credits – FEM (Finite Element Method) Analysis of Bolted Joints

**Business area:** Research and Development

**Country:** Sweden

**City:** Sodertalje

**Last application date:** 2018-11-23

**Job Id:** 20183343

**About Scania**

Scania är en världsledande leverantör av transportlösningar. Tillsammans med våra partners och kunder leder vi övergången till ett hållbart transportsystem. Under 2017 levererade vi 82 500 lastbilar, 8 300 bussar samt 8 500 industri- och marinmotorer till våra kunder. Vi omsatte närmare 120 miljarder kronor, varav 20 procent utgjordes av servicerelaterade tjänster. Scania grundades 1891 och finns idag representerat i mer än 100 länder, och har drygt 49 000 medarbetare. Forskning och utveckling är koncentrerad till Sverige, med filialer i Brasilien och Indien. Produktion sker i Europa, Latinamerika och Asien, med regionala produktcentra i Afrika, Asien och Eurasien. Scania ingår i Traton Group. För ytterligare information, besök [www.scania.com](http://www.scania.com).