South Ural State University | National Research University

5100

Welding Engineering

MSc

Department of Welding Engineering

Who is it for?

This course will provide you with a fundamental understanding of welding technologies and an awareness of recent technical developments within the relevant industries. It will also improve your communication, presentation, analytical and problem solving skills. Our graduates are highly sought after by Russian and international companies using welding and joining technologies, and are able to attain positions of significant engineering responsibility.

Why this course?

Welding is integral to the manufacture of a wide-range of products, from classical welding processes (MMA, MIG/MAG, TIG), to special welding (laser, robotics). Joining technologies continue to expand and are used in the **oil** and **gas**, automotive, shipbuilding, **pipe industry** and construction.
All our projects are industrially linked and usually involve a new development never before undertaken.

Informed by Industry

Some organisations that we regularly work with and can be mentioned are:

SMS group

GAZPROM

ESAB

KEMPPI

TRANSNEFT 2018 YEAR OF ENERGY SAVING

IPG IRE-Polus

FANUC Robotics

Regional partner

PJSC “MMK»

JSC «Trubodetal»

PJSC "Chelyabinsk metallurgical plant»

PJSC "BVK»

PJSC "Chelyabinsk tube rolling plant»

Chelyabinsk forge-and-press plant

Industrial group JSC "Konar»

Chelyabinsk mechanical plant

Course details

General Courses

Russian as a foreign language
Culturology
History and methodology of science and technology
The philosophy of technical Sciences
Supercomputer modeling of technical devices and processes
Organization and planning of the experiment

Main Courses

Theoretical foundations of welding and surfacing

Your career

Successful students develop diverse and rewarding careers in engineering management in a wide-range of organisations deploying welding technologies.

Roles include the management of welding manufacturing operations, and management of design and fabrication of welded structures.

The international nature of such activities means that career opportunities are not restricted to Russia. South Ural State University graduates develop careers around the world in oil and gas, automotive, aerospace, shipbuilding, pipe industry and construction sectors.

Computer Programs

ANSYS®

SOLIDWORKS

ROBOGUIDE

FA&ROBOT FANUC

esi get it right®

SYSWELD Weld Planner

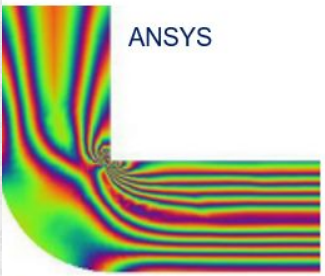
Laboratories

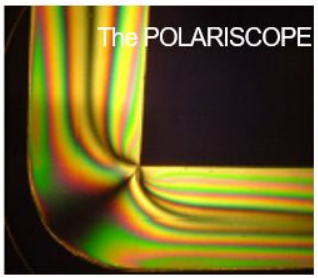
Modern robotic systems, allowing to develop welding procedures by programming the welding robot via the computer 3D-model of a welded joint

Laboratories

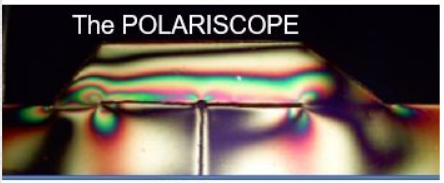
Modern software ESI SYSWELD, ANSYS, allowing to simulate welding processes and mechanical behavior of welded joints.

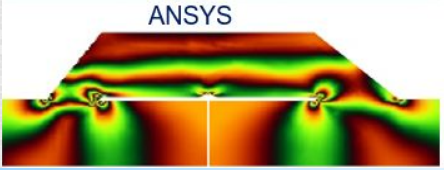
ANSYS





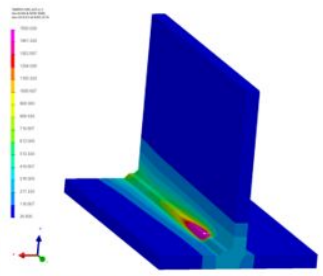
Simulation of stress-strain state of welded steel structures



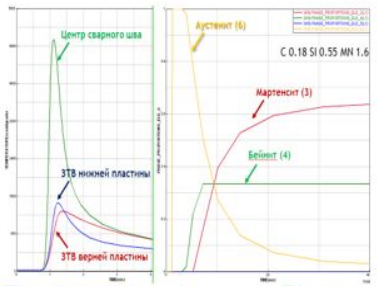


Simulation of welded joints with stress concentrators: pores, inclusions, undercuts, cracks

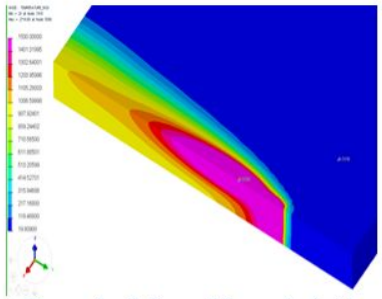
ESI SYSWELD



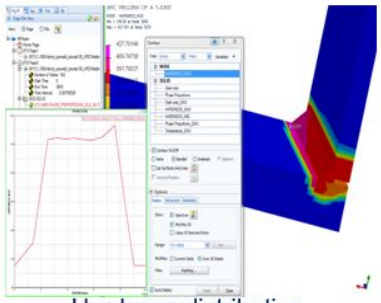
Calculation of multi-pass welding



The thermal cycle Phase



The calculation of laser-hybrid welding



Hardness distribution after welding

See you in SUSU

Come to SUSU and you will succeed

Thank you for your attention!