INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

DPT SCIENCE ET GENIE MATERIAUX
MATERIALS SCIENCE AND ENGINEERING
INSA Campus LyonTech - 7-9 Avenue Jean Capelle
Batiment Blaise Pascal - 69621 VILLEURBANNE
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Engineering methods

Non destructive testing-Lab work : Non destructive testing

IDENTIFICATION

CODE : SGM-4-S2-CND
ECTS : 2.0

HOURS

Lectures :	10.0 h
Seminars :	6.0 h
Laboratory :	16.0 h
Project :	0.0 h
Teacher-student contact :	32.0 h
Personal work :	30.0 h
Total :	62.0 h

ASSESSMENT METHOD

An 3-hour exam at the end of the second semester.

Laboratory report

TEACHING AIDS

Slides, board

TEACHING LANGUAGE

French

CONTACT

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AIMS

To understand the role and the stakes on nondestructive testing (NDT) in the industrial framework for material science. To deepen, from theoretical bases to applications, three standard techniques in NDT : eddy current testing (ET), ultrasonic testing (UT) et radiology testing (RT).

To master and to implement standard of nondestructive testing (NDT) in the industrial framework for material sciences : eddy current testing (ET), ultrasonic testing (UT) et radiology testing (RT).

CONTENT

General introduction on NDT. Principle, physical bases et application domains for each of the 3 techniques ET, UT et RT.

A laboratory day dedicated to each of the 3 techniques ET, UT et RT.

BIBLIOGRAPHY

[1] Introduction to nondestructive testing: a training guide, P. Mix, Wiley, 2005.
[2] Handbook of Nondestructive Evaluation, C. Hellier, McGraw-Hill, 2003.
[3] Nondestructive evaluation: theory, techniques and applications, P. Shull, 2002.

PRE-REQUISITE

Physics and Mathematics Modules of L2 Level.