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|---|----------------|----------------|
| COURSE: Structural Integrity | | |
| DEGREE: Bachelor in Mechanical Engineering | YEAR: 4 | TERM: 2 |

| WEEKLY PLANNING | | | | | | | | |
|-----------------|---------|---|-------------------|-----------------|---|--|------------------------------|------------------------------------|
| WEEK | SESSION | DESCRIPTION | TEACHING (mark X) | | SPECIAL ROOM FOR SESSION (Computer class room, audio-visual class room) | WEEKLY PROGRAMMING FOR STUDENT | | |
| | | | L E C T U R E S | S E M I N A R S | | DESCRIPTION | CLASS HOURS (1,66=50+50 min) | HOMEWORK HOURS (Max. Estim. 3,25h) |
| 1 | 1 | TOPIC 1: Course presentation. Stress and strain fields in linear elastic cracked solids | X | | No | Study of basic concepts on cracked solids and fracture mechanics | 1.66 | 3.25 |
| 2 | 2 | Exercises and questions related to concepts of session 1 | X | | No | Exercises and problems related to concepts of session 1 | 1.66 | 3.25 |
| 3 | 3 | TOPIC 2: Fracture criteria for linear elastic cracked solids | X | | No | Study of concepts on fracture criteria for cracked solids | 1.66 | 3.25 |
| 4 | 4 | Exercises and questions related to concepts of session 3 | X | | No | Exercises and problems related to concepts of session 3 | 1.66 | 3.25 |
| 5 | 5 | TOPIC 3: Basic notions on fatigue crack propagation | X | | No | Study of basic concepts on fatigue crack propagation | 1.66 | 3.25 |
| 6 | 6 | Exercises and questions related to concepts of session 5 | X | | No | Exercises and problems related to concepts of session 5 | 1.66 | 3.25 |
| 7 | 7 | LAB 1: Fracture toughness measurement of a metallic material | | X | LAB | Report on the lab session | 1.66 | 3.25 |

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| | | | L E C T U R E S | S E M I N A R S | | DESCRIPTION | CLASS HOURS (1,66=50+50 min) | HOMEWORK HOURS (Max. Estim. 3,25h) |
| | | | | | | | | |
| 8 | 8 | TOPIC 4: Fatigue life evaluation of structural elements | X | | No | Study of basic concepts on fatigue life evaluation of structural components | 1.66 | 3.25 |
| 9 | 9 | Exercises and questions related to concepts of session 8 | X | | No | Exercises and problems related to concepts of session 8 | 1.66 | 3.25 |
| 10 | 10 | TOPIC 5: Introduction to numerical methods in fracture | X | | No | Study of basic concepts on numerical methods in fracture | 1.66 | 3.25 |
| 11 | 11 | LAB 2: Numerical calculation of the SIF | | X | INF | Report on the lab session | 1.66 | 3.25 |
| 12 | 12 | TOPIC 6: Notions on design against fracture and fatigue | X | | No | Study of basic concepts on design against fracture and fatigue | 1.66 | 3.25 |
| 13 | 13 | TOPIC 7: Notions of available standards in fracture and fatigue | X | | No | Study of basic concepts on standards for design against fracture and fatigue | 1.66 | 3.25 |
| 14 | 14 | Exercises and questions related to concepts of sessions 12 and 13 | X | | No | Exercises and problems related to concepts of sessions 12 and 13 | 1.66 | 3.25 |
| | 15 | Additional session: Discussion on the course works | X | | No | | 1.66 | |
| Subtotal 1 | | | | | | | 25 | 46 |
| Total 1 (Hours of class plus student homework) | | | | | | | 70 | |
| 15 | | Tutorials, handing in, etc | | | | | 1.8 | - |
| 16 | Assessment | | | | | | 4 | 4 |
| 17 | | | | | | | | |
| 18 | | | | | | | | |
| Subtotal 2 | | | | | | | 6 | 4 |
| Total 2 (Hours of class plus student homework) | | | | | | | 10 | |

WEEKLY PLANNING

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|--|---------------------------------|-------------|--------------------------------------|--------------------------------------|--|--------------------------------|------------------------------------|---|
| | | | L E C T U R E S | S E M I N A R S | | DESCRIPTION | CLASS HOURS (1,66=50+50 min) | HOMEWORK HOURS (Max. Estim. 3,25h) |
| TOTAL (<i>Maximun 83 horas</i>) | | | | | | 80 | | |