

Course:  
Unit Processes in Pulping

**Course leaders:** Prof. Per Engstrand and Dr Jan-Erik Berg

**Date**: 2021-10-11--15

**Place:** Mid Sweden University, Campus Sundsvall

### Principal lecturers:

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# Monday 13.00 – 18.00

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| Lecture/laboratory no; Subject | Lecturer |
| Lecture hall: Miun |  |
| 13.00-14.15 Introduction to mechanical pulping technology | 1.5 h PE |
| 14.30-16.00 Wood raw material and morphology | 2 h EP |
| *Coffee break* |  |
| 16.15-17.00 Wood handling | 1 h EP |
| 17.15 – 18.00 Chipping | 1 h PG |
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# Tuesday 08.15 – 17.00, incl. lunch

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| Lecture/laboratory no; Subject | | | | | | | | | | Lecturer |
| Lecture hall: SCA – Miun | | | | | | | | | |  |
| 08.15-09.45 Mechanical fibre separation and refining | 2 h PE/JEB | | | | | | |
| *Coffee break* | | | |  | | |
| 10.15 –11.45 Optical properties of paper | 2h MR | | | | | | |
| *Lunch* |  | | | | | | |
| 13.15-14.45 Peroxide and dithionite bleaching chemistry. Brightness reversion | | 2 h MP | | | | | | |
| *Coffee break* | | | |  | | |
| 15.15-16.00 New aspects of paper strength | 1 h PE/GP | | | | |
| 16.15-17.00 Modelling the material flow in a refiner | | | 1 h BE | |
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#### Wednesday 08.30-17.00, dinner at 18.00

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| Lecture/laboratory no; Subject | | Lecturer | | | | |
| Lecture hall: Östrand Pulp Mill | |  | | | | |
| 08.30 Selection of seminar topics | |  | | | | |
| *To be selected from a list of topics. Literature for teamwork is suggested. Results from these studies are presented (15-20 min) in a separate seminar for that to be decided.* | | 0.5 h ML/JEB | | | | |
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| 09.00-10.00 Introduction to chemical pulping technology | | 1.5 h ML | | |
| 10.30-12.00 Chemical fibre separation | | 2 h ML | | | | |
| *12.00 Lunch at Östrand* | | | |  | |
| 13.15 –15.15 Presentation of and visit to Östrand chemical pulp mill | | | | MB / JB | |
| 15.45 -17.00 Bleaching of chemical pulp | | | | 2 h MB | |
| 18.00 Dinner | | |  | |

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# Thursday 08.15 – 11.30, 12.45-18.00

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| Lecture/laboratory no; Subject | | | | Lecturer | | | |
| Lecture hall: Miun | | | |  | | | |
| 08.15-09.45 Chemical pulp quality aspects and paper products | | | 2h ML | | |
| *Coffee break* | | | |  |
| 10.00 -11.30 Energy use in pulping | | 2 h GH | | |
| *Lunch* | | | |  |
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| 12.45-14.15 Control and simulation in pulping | | 2 h AN | | |
| *Coffee break* | | | |  |
| 14.30-16.00 Sulhite pulping and bioproducts from chemical pulping processes | | 2 h JF | | |
| 16.15-18.00 Fractionation and screening | | 2 h CS | | |

#### Friday 08.15-12.30

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| Lecture/laboratory no; Subject | | Lecturer |
| Lecture hall: Miun | |  |
| 08.15-09.45 Water use and treatment in pulping | 2 h PE | | |
| 10.15-12.00 Mechanical pulp quality aspects and paper products | | 2 h OF |
| 12.00-12.30 Selection of seminar topics  (teamwork, 2-3 members/team) | | 0.5 h PE/JEB |
| *To be selected from a list of topics. Literature for the teamwork is suggested. The results from these studies are presented (15-20 min) in a separate seminar. The date for that to be decided.* | |  |