INTERNATIONAL MASTER’S DEGREE PROGRAMME IN WIRELESS COMMUNICATIONS ENGINEERING (WCE): WCE-RAN & WCE-RF & DD-WCE

WCE STUDY OPTIONS & CURRICULUM & SCHEDULE TOOLS FOR PLANNING OF STUDIES

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Web: http://www.ee.oulu.fi/~kk/

Web Home for Enrolled WCE Students: http://www.oulu.fi/cwc/wce
Web Home for WCE Applicants: http://www.oulu.fi/university/masters/wce

WCE Orientation 5.9.2019
WCE CURRICULUM STRUCTURE

- Consist of the basic, advanced, and optional (elective) study modules, practical training, and master’s thesis work.

<table>
<thead>
<tr>
<th>Study Modules</th>
<th>RAN</th>
<th>RF</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic WCE studies</td>
<td>40</td>
<td>36</td>
<td>36 ECTS</td>
</tr>
<tr>
<td>Advanced WCE studies</td>
<td>30</td>
<td>36/37</td>
<td>36/37 ECTS</td>
</tr>
<tr>
<td>Optional WCE studies</td>
<td>≥ 17</td>
<td>≥ 12/13</td>
<td>≥ 12/13 ECTS</td>
</tr>
<tr>
<td>Practical training</td>
<td></td>
<td></td>
<td>3 ECTS</td>
</tr>
<tr>
<td>M.Sc. (Diploma) Thesis work</td>
<td></td>
<td></td>
<td>30 ECTS</td>
</tr>
</tbody>
</table>

**In total:** 120 ECTS

ECTS = European Credit Transfer System, 1 credit 25-30 hours, 1 year ca. 60 credits
WCE-RAN STUDY OPTION

Basic studies (obligatory):
• Introduction to optimization
• Numerical matrix analysis
• Statistical signal processing I
• Statistical signal processing II
• Wireless communications I
• Wireless communications II
• Radio engineering I
• Communication networks I

Advanced studies (choose):
• Multiantenna communications
• Statistical communications theory
• Wireless body area networks
• Information theory
• Channel coding and modulation
• Convex optimization
• Modern topics in telecommun. & radioengineering
• Telecommmun. Eng. project or Electronics design & construction exercise

Optional studies (choose):
• 30 elective courses
WCE-RF STUDY OPTION

Basic studies (obligatory):
• Electronics Design II
• Radio engineering I
• RF components & measurements
• Electronic system design
• Wireless communications I
• Statistical signal processing I
• Statistical signal processing II

Advanced studies (obligatory):
• Electronics Design III
• Radio engineering II
• Telecom. circuit design
• Microel. packaging technologies
• Antennas
• Telecommmun. Eng. project or Electronics design & construction exercise

Optional studies (choose):
• Radiochannels
• Communication networks I
• Wireless communications II
• Commun. signal processing
• Simulations & tools for telecommun.
• Modern topics in telecommun. & radioengineering
• + 29 other elective courses

Optional WCE subject studies ~ 3-4 courses
• RAN $\geq 17$ ECTS
• RF $\geq 12-13$ ECTS
OPTIONAL STUDIES

• Optional (elective) courses plan must be submitted **always** to PSP advisor & coordinator Kari/Matti before taking courses.
• Finnish language studies are also suggested as electives during 1st year (max. 10 ECTS).
• EE & CSE & IPS studies for RAN & RF study options:
  • Electronics design courses & lab. works are offered as electives by the CAS, OPEM, MIC research units
  • Computer engineering & DSP courses are offered as electives by CMVS, MISG, UBICOMP research units
  • Courses from Information processing science (IPS)
• Courses offered by different UO faculties & departments are also possible, e.g.
  • Industrial engineering dept.
  • Information processing science dept.
  • Oulu Business School studies
  • You **always** have to **ask** coordinator’s opinion about suitability **before** taking them!
LANGUAGE STUDIES AS ELECTIVES

• Max. 10 ECTS Finnish language studies is allowed into electives.
  • Check the schedules of Finnish courses and the free seats in language study groups from Weboodi ASAP!
  • You can choose only from the following set of Finnish courses:
    • 900017Y Survival Finnish Course - 2 ECTS credits
    • 900013Y Beginners' Finnish Course 1 - 3 ECTS credits
    • 900053Y Beginners' Finnish Course 2 - 5 ECTS credits
  • Reserve/book a Finnish language group ASAP, since number of groups/seats is typically limited every year!
WCE-RAN SCHEDULE – 1ST YEAR 2019-2020

Autumn 2019
Periods 1-2

- Numerical Matrix Analysis (5 cr, 1 p)
- Statistical Signal Processing I (5 cr, 1 p)
- Wireless Commun. I (5 cr, 1 p)
- Introduction to Optimization (5 cr, 2 p)
- Communications Networks I (5 cr, 2 p)
- Radio Channels (5 cr, 2 p)
- Simulations & Tools for Telecom (5 cr, 2 p)

Spring 2020
Periods 3-4

- Communications Networks II (7 cr, 3-4 p)
- Statistical Signal Processing II (5 cr, 3 p)
- Advanced Practical Training (3 cr)
- Antennas (5 cr, 4 p)
- Wireless Body Area networks (5 cr, 3-4 p) *
- Wireless Commun. II (5 cr, 3 p)

Finnish Language studies (2-10 cr), and/or optional studies depending on personal study plan (PSP)

Basic Studies (all 40 cr obligatory)
Advanced Studies (choose ≥ 33 cr)
Optional Studies (choose ≥ 17 cr)

*) = will be lectured on even years (2020, 2022)
**) = will be lectured on odd years (2021, 2023)

WCE Orientation 5.9.2019
# WCE-RAN Schedule – 2nd Year 2020-2021

## Autumn 2020

<table>
<thead>
<tr>
<th>Periods 1-2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telecommunication Engineering Project (5 cr) or Electronics Design and Construction Exercise (6 cr, 1-2 p) (one of these is obligatory)</td>
</tr>
<tr>
<td>Convex Optimization (7 cr, 1-2 p) (*)</td>
</tr>
<tr>
<td>Information Theory (5 cr, 1 p) (*)</td>
</tr>
<tr>
<td>Multiantenna Commun. (5 cr, 1 p) (not available for student group 2019-2021) **)</td>
</tr>
<tr>
<td>Channel Coding &amp; Modul. (5 cr, 1 p) (not available for student group 2019-2021) **)</td>
</tr>
<tr>
<td>Statistical Commun. Theory (7 cr, 1-2 p) (*)</td>
</tr>
</tbody>
</table>

## Spring 2021

<table>
<thead>
<tr>
<th>Periods 3-4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master’s Thesis Work, Maturity Test, Seminar (30 cr, 3-4 p)</td>
</tr>
<tr>
<td>Commun. Signal Proc. (5 cr, 4 p) **)</td>
</tr>
<tr>
<td>Radio Engineering I (5 cr, 2 p)</td>
</tr>
<tr>
<td>Signal Processing Systems (5 cr, 2 p)</td>
</tr>
</tbody>
</table>

## Finnish Language Studies

- **(2-10 cr)**, and/or optional studies depending on personal study plan (PSP)

## Basic Studies (all 40 cr obligatory)

## Advanced Studies (choose ≥ 33 cr)

## Optional Studies (choose ≥ 17 cr)

*) = will be lectured on even years (2020, 2022)  
**) = will be lectured on odd years (2021, 2023)  

WCE Orientation 5.9.2019
WCE-RF SCHEDULE – 1ST YEAR 2019-2020

Autumn 2019
Periods 1-2

- Statistical Signal Processing I (5 cr, 1 p)
- Electronics Design II (6 cr, 1 p)
- Wireless Commun. I (5 cr, 1 p)
- Radio Engineering I (5 cr, 2 p)
- Electronics Design III (6 cr, 2 p)
- Radio Channels (5 cr, 2 p)

Spring 2020
Periods 3-4

- Statistical Signal Processing II (5 cr, 3 p)
- Radio Engineering II (6 cr, 3 p)
- Microel. & Packaging Technologies (5 cr, 3 p)
- Advanced Practical Training (3 cr)

Finnish Language studies (2-10 cr), and/or optional studies depending on personal study plan (PSP)

Basic Studies (all 36 cr obligatory)
Advanced Studies (choose ≥ 36/37 cr)
Optional Studies (choose ≥ 12/13 cr)

*) = will be lectured on even years (2020, 2022)  **) = will be lectured on odd years (2021, 2023)
**WCE-RF SCHEDULE – 2ND YEAR 2020-2021**

**Autumn 2020**  
Periods 1-2

- **Telecommunication Engineering Project** (5 cr)  
  or **Electronics Design and Construction Exercise** (6 cr, 1-2 p) (one of these is obligatory)

- **Electronic System Design** (5 cr, 1 p)

- **Telecommunications Circuit Design** (6 cr, 1 p)

- **Finnish Language studies** (2-10 cr), and/or optional studies depending on personal study plan (PSP)

**Spring 2021**  
Periods 3-4

- **Master’s Thesis Work, Maturity Test, Seminar** (30 cr, 3-4 p)

- **Basic Studies**  
  (all 36 cr obligatory)

- **Advanced Studies**  
  (choose ≥ 36/37 cr)

- **Optional Studies**  
  (choose ≥ 12/13 cr)

*) = will be lectured on even years (2020, 2022)  
**) = will be lectured on odd years (2021, 2023)

WCE Orientation 5.9.2019
UO SCHOLARSHIP FOR NON-EU/ETA STUDENTS

- Waiver to release the payment of tuition fee of 7500 Eur/yr
- To renew it for the second year, **at least 60 ECTS** is required to obtain by the end of 1st academic year, **31.7.2020**.
- **No UO scholarship for the 3rd year**, i.e. WCE degree must be obtained with scholarship by the end of 2nd academic year (**31.7.2021**), or student have to pay 10000 Eur for the third year.
- Read the detailed terms of scholarship in "**Terms and Conditions**" document received with your admission acceptance letter.
- No (sad) excuses are taken in account if student fails to obtain 60 ECTS.
- In the case of long term severe sickness during studies always ask medical doctor’s statement concerning your ability to do studies
  - Contact e.g. Finnish Students Health Service, FSHS/YTHS, but not for an ordinary couple of days flu absence!
- If you have got CWC Scolarship of 5000 Eur for your studies contact Ms. Renata Kordasne Sebö ([renata.sebo@oulu.fi](mailto:renata.sebo@oulu.fi)) to start 1st part payment (3000 Eur) process. 2nd part is payed in January 2020.
CWC’S GRANT FOR MASTER’S THESIS & INTERNSHIP

• If you wish to have a chance to obtain a CWC’s master’s thesis grant of 3000 Eur for the thesis work during second study year, also at least 60 ECTS is required to be passed by the end of 1st academic year (31.7.2020)
• NOTE:
  1. Student has always to follow either WCE-RAN or WCE-RF 1st year curriculum exactly, i.e., ”easy-to-do” elective studies that are not accepted for the 1st year personal study plan (PSP) are not counted into the sum of obtained credits required by the terms of CWC’s grant. Follow always schedule of basic and advanced courses!
  2. Study credits that are obtained with credit compensation are not included into the sum of obtained credits from a standpoint of UO tuition fee waiver, i.e. if you have done a course during your B.Sc. studies the content of which equals, or is closely similar to WCE course content based on recognition of prior learning process (RPL shortly) procedure.
• CWC also offers training grant of 1500 Eur for summer internship after 1st study year to be done at CWC.
RESULTS FOR FRAUD & MISCONDUCT IN STUDIES

• If student participates in exam cheating (e.g. using smart phones, stored material, conversation, looking friend’s paper), or preparing course exercise report, or training report e.g. based on friend’s reports etc. (plagiarism) a hearing is always conducted by ITEE dean of education, and punishment results.

• Even carrying mobile phone in exams on with you results dean’s hearing!

• Students who have participated in misconduct in their studies are not eligible for:
  • Paid (contract-based) training topic (2 months x 2200 Eur/month)
  • Paid master’ thesis work (6 months x 2200 Eur/month)
  • CWC training scholarship (1500 Eur)
  • CWC master’s thesis scholarship (3000 Eur)
  • Doctoral studies at University of Oulu graduate school
  • To get job from CWC after graduation

• Excuses are not taken in account if student participates in cheating. Clearly the risk of cheating is not worth taken!
LAPTOP & SMART PHONE TOOLS FOR STUDYING

• Several tools to help in daily studies, and to monitor progress.
• You will get your personal PAJU userID (called account) and password when registering to UO.
• account is needed to access most web-tools.
• Your student tutor will help you to get familiar with these systems.
• 7 systems to be introduced next:
  • O365 → UO e-mails, Microsoft softwares (student edition)
  • TUUDO → timetable, credits, registrations, study news (smart phone-based)
  • Campus navigator → maps & places with smart phone app
  • WEBOODI → personal study register, all course info, course/exam registration
  • OPTIMA → stored lecture & exercise materials
  • MOODLE → stored lecture & exercise materials
  • OodiPSP → personal study plan (PSP) tool within Weboodi
  • OSAT → study rigth activation & extension, application of degree and degree certificate, recognition of prior learning (RPL) application, resignation, application of certificate of student status
YOUR E-MAIL ADDRESS AT UO

• **O365**
  • Students will get their personal UO e-mail address & access for the *Microsoft’s Office 365 for Education* (O365) cloud service.
  • Take a glance of UO IT admin services: [http://www.oulu.fi/ict/](http://www.oulu.fi/ict/)
  • Instructions to activate O365: [http://www.oulu.fi/ict/office365](http://www.oulu.fi/ict/office365)
  • O365 will offer our students a free Outlook e-mail, and free cloud services like Office Online applications (Word, Excel, PowerPoint, OneNote), calendar and OneDrive.
  • NOTICE: WCE staff will use only official UO addresses to contact you, i.e. they will never contact you with your private e-mail addresses (Gmail, Hotmail, Yahoo, etc.).
  • Format of official UO e-mail address designed to you is:
    • `account@student.oulu.fi` or `firstname.secondname@student.oulu.fi` (UO network & e-mail)
YOUR E-MAIL ADDRESSES AT UO

• O365
  • Remember every now and then check your O365 e-mail account in order not to miss important messages from teachers, coordinator, officers, etc., or forward your O365 messages to your private e-mail server.
  • Instructions how to get O365 access can be found from: http://www.oulu.fi/ict/office365 .
  • When encountering computer problems, just ask help from your Kummis, or from older WCE colleagues! They will certainly help you.
DAILY & WEEKLY COURSE CALENDARS

- **TUUDO**: [https://www.oulu.fi/forstudents/tuudo](https://www.oulu.fi/forstudents/tuudo)
  - TUUDO combines student and study services into one place.
  - TUUDO features:
    - Timetable for each day
    - Obtained credits and notifications of new credits
    - Credit statistics from Weboodi
    - Registration for courses and exams
    - Map of the University and room search
    - Menus of campus restaurants
    - Studying news
    - Use UO *account* to login into TUUDO.
    - Load TUUDO into your Android or iOS smart phone from [https://www.tuudo.fi/en/](https://www.tuudo.fi/en/)
For Students

Tuudo is a mobile app, made for you, to make your student life simpler. With Tuudo, you manage your studies and ease your daily life, both on and off the campus. Enjoy your institution’s most important services and your study information on your mobile device – safely, simply and surely up to date.

Load this from Google Play or AppStore
CAMPUS NAVIGATOR

- You can find your location inside the campus, search for auditoriums, restaurants, rest rooms, offices and meeting rooms, and get instructions on how to find your way around campus.

WCE Orientation 5.9.2019
EVERYTHING STUDY-RELATED IS IN WEBOODI

WEBOODI

- All student’s study-related history like contact addresses, course & exams registrations, leaves, course marks, etc. are stored there, i.e. everything about you since first enrollment.
- The most important system at UO, i.e., a ”mother” of all student-related web-based study tools.
- Closed environment, i.e. account & PW needed
- Course & exam registrations & exam results → everything is also seen in TUUDO
- Detailed description of courses, their schedule and classrooms: number of ECTS, prerequisites, learning outcomes, target group, timing, contents, mode of delivery, learning activities, assessment methods & criteria, grading, teacher’s contact e-mail
- You will soon create your Personal Study Plan (PSP) in Weboodi
  - Shortly, OodiPSP is an E-document for the purpose of monitoring your study progress (by yourself and your personal study advisor/coordinator).
Welcome to WebOodi!

**NEWS AND ANNOUNCEMENTS (1)**

Registration for academic year 2017-2018  
04.05.2017

**INSTRUCTIONS**

You can browse course catalogues and search for instruction without logging in. In the top menu, choose *Instruction and courses* or function *Search.* To log in you need to have University of Oulu user account. Please check that your e-mail address is correct (section Personal data).

**INSTRUCTIONS AND LINKS:**
- If you are missing a user id, or you have problems with login, contact IT Services Helpdesk:
  - [Contact Information](https://www.oulu.fi/units/it-solutions/it-helpdesk)

[Login button highlighted]

Feed your **account** & PW here

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**WEBOODI:**  
[HTTPS://WEBOODI.OULU.FI/OODI/ETUSIVU.HTML?KIELI=6](HTTPS://WEBOODI.OULU.FI/OODI/ETUSIVU.HTML?KIELI=6)
You can search teachers, contents, learning outcomes, prerequisites, implementation, timetables, exams, room info, etc. of the whole academic year 1.8.2019-31.7.2020 for each course by typing course name or course code here.
ALL COURSE MATERIALS & STUDY GROUP COMMUNICATION IS IN OPTIMA OR IN MOODLE

• OPTIMA
  • Interactive two-way channel for the purpose of communication between teacher and student
  • Closed environment, i.e. all teacher’s materials & communications are protected with account & PW
  • Organized as folders for each course
  • Lecture, class-exercise, exercise work share, instructions, etc. materials are stored there
  • Registration for courses also possible
  • Because there are several OPTIMA environments for different faculties, choose right OPTIMA environment
  • After PAJU logging:
    • Enter an environment: → Oulun yliopisto, TTK
  • MOODLE is quite similar system like OPTIMA but more modern. You lecturer will tell which one he/she will use.
  • Registration BOTH with WEBOODI AND with OPTIMA/MOODLE is recommended.
  • Your Kummi will help you to use OPTIMA & MOODLE.
OPTIMA: [HTTPS://OPTIMA.OULU.FI/](https://optima.oulu.fi/)

Start from here
Choose this OPTIMA environment:

Oulun yliopisto, TTK
Course registration call for WC I workspace and other UO courses

OPTIMA instructions

521323S WIRELESS COMMUNICATIONS I

INFORMATION (Autumn 2017)
Lectures: Jari Iinatti, Room TS404, jari.iinatti (at) oulu.fi
Exercises: Timo Kokkonen, timo.kokkonen (at) oulu.fi
Laboratory project: Starting at November: Timo Kokkonen

<table>
<thead>
<tr>
<th>Lectures</th>
<th>DATE</th>
<th>Exercises</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part 0, General Course Information</td>
<td>Mon 30.10, 10:15-12:00</td>
<td>Useful equations</td>
<td></td>
</tr>
<tr>
<td>Part 1, Introduction Animation (slide 5)</td>
<td>Wed 1.11, 12:15-14:00</td>
<td>Q-Function table</td>
<td></td>
</tr>
<tr>
<td>Part 2, Digital Modulation Animation (slide 5, 36.45)</td>
<td>Thurs 2.11, 8:15-10:00</td>
<td>Exercise 1: questions, Exercise 1: solutions, Question 4 solution</td>
<td></td>
</tr>
<tr>
<td>Part 2, Digital Modulation, cont Animation (slide 5, 36.45)</td>
<td>Mon 6.11, 10:15-12:00</td>
<td>Assignments 1: questions</td>
<td></td>
</tr>
<tr>
<td>Part 3, Performance in AWGN</td>
<td>Tues 7.11, 14:15-16:30</td>
<td>Exercise 2: questions, Exercise 2: solutions</td>
<td></td>
</tr>
<tr>
<td>Part 3, Performance in AWGN, cont</td>
<td>Thurs 9.11, 8:15-10:00</td>
<td>Assignments 2: questions</td>
<td></td>
</tr>
<tr>
<td>Part 4, Radio Channels</td>
<td>Mon 13.11, 10:15-12:00</td>
<td>Information related to the Laboratory (Simulation) work</td>
<td></td>
</tr>
<tr>
<td>Part 5, Performance in Fading</td>
<td>Thurs 16.11, 8:15-10:00</td>
<td></td>
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</tbody>
</table>
OPTIMA’S CWC MASTER’S THESIS TOPICS FOLDER

Last update: 6.9.2017

Red color indicates a topic is temporarily reserved for some student. Topic will be removed from the list once a student and a thesis supervisor agree to start a topic. If a student gives up a topic, font color will change to black again, and someone else student can reserve it.

Free master's thesis topics (new topics with blue color, reserved topics with red color)

1. Five topics for antennas and propagation (More information: Veikko Hovinen (Published: April 2013)
2. Aging-Effect of Human Body Tissue on UWB Antenna Performance and Operation (More information: Markus Berg (Published: April 2013)
3. Frequency Selective Surfaces (FSS) in selective glazing of windows, More information: Erkki Salonen (Published: April 2013)
4. Develop and analyze of strong body mapping for wireless sensor networks, More information: Pradeep Kumar (Published: April 2013)
5. An implementation of robust user authentication framework for wireless sensor networks, More information: Pradeep Kumar (Published: April 2013)
6. Usability of FM-UWB in WBAN System, More information: Ville Niemela (Published: April 2013)
7. DBPSK/DQPSK modulations in IR-UWB WBAN System, More information: Ville Niemela (Published: April 2013)
8. UWB Antenna with Band-Rejection for 5 GHz WLAN, More information: Markus Berg (Published: April 2013)
9. Wideband UWB BALUN, More information: Markus Berg (Published: April 2013)
10. Scattering Measurement of Vivaldi Antenna, More information: Marko Soini (Published: April 2013)
11. Visible light communication testbed, More information: Marcus Katz (Published: April 2013)
12. Radio environment characterization in industrial automation scenarios, More information: Harri Posti (Published: September 2013)
13. Error control techniques for caching storage in 5G wireless heterogeneous networks, More information: Nandaana Rajathewa (Published: September 2013)
15. Implementation of layer 2 protocols in VPLS-enabled ethernet networks, More information: Madhusanka Liyanage (Published: September 2013)
16. Performance analysis of full-duplex wireless networks using stochastic geometry, More information: Pedro Nardelli (Published: October 2014)
17. User admission and serving cell assignment for throughput maximization in cellular systems, More information: Antti Toili or Jarkko Kaleva (Published: October 2014)
18. Coherent transmission mode selection for coordinated multipoint transmission, More information: Antti Toili or Jarkko Kaleva (Published: October 2014)
19. Analysis of robust and secure access control mechanisms in smart environments, More information: Pradeep Kumar (Published: October 2014)
20. Study end-to-end authentication framework for internet-of-things pervasive healthcare, More information: Pradeep Kumar (Published: October 2014)
21. Two master’s thesis topics related to 5G wireless RF systems and implementation architecture aspects, More information: Aaro Parssinen (Published: February 2015)
22. Measurements and performance evaluation of THz band for ON-OFF keyed wireless communication, More information: Joonas Kokkonen and Janne Lehtomaki (Published: October 2015)
25. Secure communication architecture for software defined networks and SDN based industrial networks, More information: Madhusanka Liyanage (Published: October 2015)
26. Software-defined networking for smart grid networks, More information: Madhusanka Liyanage (Published: October 2015)
27. Implementation of layer 2 protocols in VPLS-enabled ethernet networks, More information: Madhusanka Liyanage (Published: October 2015)
28. Dynamic WBAN channel modeling using MCMC UWB transceivers, More information: Matti Hamalainen (Published: October 2015)
29. Ultra reliable communication (URC) with security guarantees, More information: Hilary Alves (Published: April 2016)
30. Review and analysis of low-power wide area networks (LPWANs) for critical infrastructure monitoring, More information: Jussi Haapola (Published: September 2016)
31. Feasibility study of 802.11ah for Wireless Body Area Networks, More information: Harri Virtala and Matti Hamalainen (Published: September 2016)
32. Design and Implementation of a Visible Light Communications (VLC) Transceiver for a Wireless Hot-spot, More information: Prof. Marcos Katz (Published: September 2016)
33. Beamforming Designs for Full-Duplex Simultaneous Information and Power Transfers, More information: Quang-Daoan Vu, Quang Vu@ee.oulu.fi (Published: September 2016)
34. Advanced Equalizers for Long-Delay Spread Channels, More information: Harri Saarnisaari, harri.saarnisaari@oulu.fi (Published: January 2017)
35. SON between Systems for Frequency-Division Duplex (FDD) in Ultra Dense Networks, More information: juha.arpala@oulu.fi (Published: January 2017)
OSAT:
HTTPS://OSAT.OULU.FI/INDEX.PHP?LANG=EN_US

Feed your account & PW here
WHAT CAN A STUDENT DO WITH OSAT?

• In OSAT-system a student can fill in an electronic:
  • RPL (Recognition of Prior Learning)-application
  • Application for extended study period for completion of studies
  • Study right reactivation
  • Application for degree certificate
  • Resignation form
  • Application of certificate of student status
  • System login to OSAT is with university account.
  • A student with no valid university account can login with Citizen's account (suomi.fi).
  • Only PDF-format (.pdf) application attachments are accepted.

• OSAT guide:
CONFUSED ABOUT ALL THESE WEB-TOOLS?

• The most updated information of each course schedule is always located in WEBOODI.
• Summarized information can be found also from MOODLE and OPTIMA. Follow them for each course!
• Don’t worry about these tools! You will learn them sooner than you will believe.
• Advice: Ask your Kummi, or your older WCE colleague students. They will certainly help you.
• Join also the first lecture of each new course, because the most important information for passing the course is always given then!
PERSONAL STUDY PLAN (PSP)

- Electronic PSP-plan is created with OodiPSP tool within Weboodi.
- A tool both for student and personal study advisor.
- PSP is a plan that includes the necessary choices and timing in order to graduate.
  - How am I going to go through my degree programme?
- By using OodiPSP student will get an overall picture of studies dealing with contents and timing
  - Degree structure as starting point, i.e. start with your curriculum documents shared you today.
- Important part of PSP is study goals and following progress.
- You must create your own PSP by 1.11.2019!
  - PSP supervisor asks you for study progress & PSP meeting
- **Video how to create your own PSP with OodiPSP tool** ([http://www.oulu.fi/oodienglish/node/19271](http://www.oulu.fi/oodienglish/node/19271))
YOUR PERSONAL STUDY PLAN AT OODI PSP

Responsible person at faculty or departmental level: Creating degree structures

Student: Create and update PSPs

Student: Send PSP for approval?

Yes

Student: sends PSP for approval

Email to Advisor

No

PSP not ok

Email to student

Advisor: Checks and comments on PSP

PSP not ok

Email to student

Advisor: Approves and archives PSP

PSP ok!

Email to student

Approved PSP

WCE Orientation 5.9.2019
**EXAMPLE FOR OODI PSP OUTLOOK**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Year</th>
<th>Plan ECTS</th>
<th>Obtained ECTS</th>
<th>Grade</th>
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<tr>
<td>A51225</td>
<td>Module of the Option, Wireless Communications Engineering</td>
<td>2016-17</td>
<td>35/40-44</td>
<td>30</td>
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<td></td>
<td>Compulsory</td>
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<td>031025A</td>
<td>Introduction to Optimization</td>
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<td>521321S</td>
<td>Elements of Information Theory and Coding</td>
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<td>521316S</td>
<td>Broadband Communications Systems</td>
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<td>521323S</td>
<td>Wireless Communications I</td>
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<td>521340S</td>
<td>Communication Networks I</td>
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<td>521324S</td>
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<td>521385S</td>
<td>Mobile Telecommunication Systems</td>
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<td>Advanced module</td>
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<td>29/16-31</td>
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<td>Either Antennas or Radio Channels is chosen as compulsory (they are lectured in alternate years). Furthermore, choose the minimum of two courses from the set list.</td>
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<td>Two courses from this set of four courses must be selected</td>
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<td>521317S Wireless Communications II</td>
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YOUR ORIGINAL B.SC. DOCUMENTATION

• Bring your *original bachelor’s degree diploma certificate and transcript of records* to Faculty of ITEE student services cluster as will be told today by ITEE faculty’s officer Ms. Sirpa Nelo (room TS113).
• You must *show your passport and residence permit card* when bringing your documents.
• You will get a receipt that you have left your documents at the faculty office.
• You’ll get your documents back within one month.
• Coordinator will inform you, when you can pick up them back.
ENJOY YOUR STAY IN FINLAND!

FIND LIFE-LONG FRIENDS, AND CREATE SOCIAL & ACADEMIC NETWORKS IN ORDER TO BE CONNECTED IN A GLOBAL WIRELESS WORLD, SOON WITH 5G AND BEYOND (SEE OUR 6GENESIS FLAGSHIP PROGRAMME)!

Regards, WCE staff