

THE FRAIL PROJECT

STUDENT EXCHANGE PROGRAM



SEPTEMBER - OCTOBER 2019
MUNICH - BRUSSELS



QOLware • umec





10TH - 13TH SEPTEMBER 2019
QOLWARE
MUNICH

PRACTICAL INFORMATION

ADDRESS

WERK1.BAYERN GMBH, ATELIERSTR. 29, D-81671 MUNICH

[HTTPS://EN.WERK1.COM](https://en.werk1.com)

PUBLIC TRANSPORTATION

STOPS NEAR WERK1

OSTBAHNHOF (SUBWAY, BUS STATION)

FIRST DAY MEETING POINT

CAFETERIA

[HTTPS://EN.WERK1.COM/CAFE/](https://en.werk1.com/cafe/)

LOOK FOR **CRISTINA SOAZ**



SEPTEMBER 10

WELCOME 9:30 - 10:00
COFFEE & BRETZELS

QOLWARE INTRO 10:00 - 11:30
VISIT TO INCUBATOR & INTRODUCTION TO QOLWARE PROJECTS

STUDENT PROJECT PRESENTATION 11:30 - 12:00
CREATION OF A USER INTERFACE & VISUALIZATION CONCEPT FOR A FRAIL ASSESSMENT TOOL

LUNCH 12:00 - 13:00

MARKET AND LITERATURE RESEARCH 13:00 - 16:00
MARKET AND SCIENTIFIC RESEARCH ON STATE OF THE ART TOOLS FOR FRAIL ASSESSMENT

SUMMARY OF THE DAY 16:00 - 17:00
DISCUSS THE DAY'S WORK AND NEXT STEPS WITH TUTORS

SEPTEMBER 11

SUMMARY OF STATE-OF-THE-ART 9:00 - 11:30
SUMMARY OF THE MARKET/LITERATURE RESEARCH ACCORDING TO THE STEPS DEFINED THE PREVIOUS DAY

PRESENTATION OF FINDINGS 11:30 - 12:00
PRESENT AND DISCUSS FINDINGS ON STATE-OF-THE-ART RESEARCH WITH TUTORS. DEFINE THE NEXT STEPS.

LUNCH 12:00 - 13:00

PRODUCT AND USER RESEARCH 13:00 - 14:30
ANALYZE THE PRODUCT AND THE USER BENEFITS OF A FRAIL ASSESSMENT TOOL FOR THE LOLA APP

DEFINITION AND PRIORITIZATION OF PRODUCT FEATURES 14:30 - 16:00
DEFINE THE BACKLOG FOR THE PRODUCT FEATURES OF THE FRAIL ASSESSMENT TOOL ACCORDING TO THE PREVIOUS FINDINGS

SUMMARY OF THE DAY 16:00 - 17:00
DISCUSSION WITH TUTORS ABOUT WORK DONE AND NEXT STEPS



SEPTEMBER 12

USER INTERFACE CONCEPT 9:00 - 11:30
WORK ON A CONCEPT FOR THE USER INTERFACE OF THE FRAIL ASSESSMENT TOOL

PRESENTATION OF PRELIMINARY WORK 11:30 - 12:00
PRESENT AND DISCUSS THE CONCEPT WITH TUTORS. TOGETHER WE WILL DEFINE THE NEXT STEPS.

LUNCH 12:00 - 13:00

MOCKUP 13:00 - 16:00
WORK ON THE MOCKUP OF THE APP ACCORDING TO THE INDICATIONS GIVEN BY TUTORS

SUMMARY OF THE DAY 16:00 - 17:00
DISCUSS THE DAY'S WORK AND NEXT STEPS WITH TUTORS

SEPTEMBER 13

MOCKUP 9:00 - 12:00
CONTINUE WORKING ON THE MOCKUP OF THE APP

LUNCH 12:00 - 13:00

FINALIZE & SUMMARIZE 13:00 - 15:00
FINALIZE YOUR WORK AND CREATE SLIDES FOR PRESENTATIONS

FINAL PRESENTATION 15:00 - 16:00
PRESENT YOUR WORK TO THE TUTORS (PRESENTATION OPEN TO EXTERNAL AUDIENCE)

"BIER ABEND" 16:00
GET TOGETHER AND GRAB SOME BIERS (LOCATION TBC)



16TH - 19TH SEPTEMBER 2019
TUM
MUNICH

PRACTICAL INFORMATION

ADDRESS

CAMPUS D, GEORG-BRAUCHLE-RING 62, MUNICH

PUBLIC TRANSPORTATION

TICKETS

"1 ZONE" SINGLE TICKET ("INNENRAUM" CITY CENTRE; CURRENTLY € 2,90)

FROM MUNICH CENTRAL STATION ("HAUPTBAHNHOF HBF")

TAKE UNDERGROUND LINE U1/U7 (GREEN LINE) TO "OLYMPIA-EINKAUFSZENTRUM"

LEAVE THE TRAIN AT THE SECOND TO LAST STATION "GEORG-BRAUCHLE-RING" AND TAKE THE STAIRS AT THE END OF THE TRAIN

AT THE TOP OF THE STAIRS, TURN LEFT AND TAKE THE STATION EXIT SIGNPOSTED AS "BUS 175 RICHTUNG LUDWIGSFELD"

FOLLOW THE PEDESTRIANS WALK TOWARDS THE O2 SKYSCRAPER

CAMPUS D IS AT THE FAR END OF THE BUILDING COMPLEX ON THE LEFT HAND SIDE

AT CAMPUS D

IN THE BUILDING

YOU WILL FIND US ON THE THIRD FLOOR

ROOM L010 AND R322 (LABS)

LOOK FOR ELVIRA SALAZAR LÓPEZ





SEPTEMBER 16

WELCOME	9:30 - 10:15
LAB 1	10:15 - 12:30
SHORT STUDY OF WEARABLE ACCURACY AND RELIABILITY. PART A: METHODS	
LUNCH	12:30 - 13:30
LAB 1	13:30 - 15:00
SHORT STUDY OF WEARABLE ACCURACY AND RELIABILITY. PART A: METHODS	
EXPERT'S TALK	15:00 - 16:30
INTRODUCTION INTO THE ASSESSMENT OF MOTOR DEFICITS USING KINEMATICS	

SEPTEMBER 18

SYMPOSIUM	
NEW TECHNOLOGIES IN THE ASSESSEMENT OF PHYSICAL ACTIVITY AND MOTOR SKILLS	
EXPERT'S TALK	9:30 - 11:00
NEW APPROACHES IN THE ASSESSMENT OF FINE MOTOR CONTROL: CLINICAL FINDINGS	
EXPERT'S TALK	11:00 - 12:30
STRATEGIES AND EXPERIENCES IN BRINGING AN INNOVATION TO THE MARKET	
LUNCH	12:30 - 13:30
EXPERT'S TALK	13:30 - 15:00
STRATEGIES AND EXPERIENCES IN BRINGING AN INNOVATION TO THE MARKET	
LAB 2	15:00 - 16:30
SHORT STUDY. PART B: DATA ANALYSIS (I)	

SEPTEMBER 17

SYMPOSIUM	
NEW TECHNOLOGIES IN THE ASSESSEMENT OF PHYSICAL ACTIVITY AND MOTOR SKILLS	
WELCOME	10:15 - 10:30
EXPERT'S TALK	10:30 - 11:30
THE TECHNOLOGY BEHIND FITNESS MEASURES: IMUS	
EXPERT'S TALK	11:30 - 12:30
NEW AI APPROACHES IN CLINICAL DIAGNOSIS	
LUNCH	12:30 - 13:30
EXPERT'S TALK	13:30 - 15:00
EMPLOYING MOBILE PHONE TECHNOLOGY TO ASSESS FUNCTIONAL DEFICITS IN NEUROLOGICAL DISEASE	
EXPERT'S TALK	15:00 - 16:30
NEW APPROACHES IN THE ASSESSMENT OF FINE MOTOR CONTROL: TECHNOLOGIES	
INCUBATOR WERK1 ACADEMY WORKSHOP	17:00 - 19:00
ORGANIZED BY QOLWARE (TBC)	

SEPTEMBER 19

LAB 2	9:30 - 11:00
SHORT STUDY. PART B: DATA ANALYSIS (II)	
LAB 3	11:00 - 12:30
SHORT STUDY. PART C: DISCUSSION & PREPARING PRESENTATIONS	
LUNCH	12:30 - 13:30
SMALL GROUP DISCUSSION	13:30 - 14:00
GROUP DISCUSSION	14:00 - 15:30
WRAP-UP SESSION	15:30 - 16:30



1ST - 4TH OCTOBER 2019
IMEC - ETRO - VUB
BRUSSELS

PRACTICAL INFORMATION

ADDRESS

PLEINLAAN 9, 1050 BRUSSELS

PUBLIC TRANSPORTATION

TICKETS

FROM (AND TO) THE AIRPORT, YOU NEED '**AIRPORT TICKET**'. YOU CAN BUY IT IN THE TICKET MACHINE FOR 4.5 EURO, OR IN THE BUS FOR 6 EURO

TRAVELING WITHIN BRUSSELS, YOU CAN BUY SINGLE TICKET WHICH YOU VALIDATE WHEN ENTERING (OR CHANGING) METRO, BUS, OR TRAM. TICKET IS VALID FOR 60 MINUTES AFTER THE FIRST VALIDATION.

STOPS NEAR IMEC

PETILLON (METRO 5)

ETTERBEEK (TRAM 7 AND 25)

FROM THE AIRPORT

TAKE THE BUS (12 OR 21) TO **DIAMANT STATION**

GO TO UNDERGROUND TRAM STATION AND TAKE A TRAM (7 OR 25) TO **ETTERBEEK STATION**

FROM ETTERBEEK STATION IT'S A 5 MINUTE WALK TO THE IMEC BUILDING

AT IMEC

IN THE BUILDING

OUR OFFICES ARE ON THE 1ST FLOOR

AFTER THE FIRST GLASS DOOR, TURN RIGHT

LOOK FOR **BART JANSEN** (OFFICE 1.59) OR **KATKA KOSTKOVA** (OFFICE 1.55)

READING MATERIALS

A PUBLIC DOMAIN DATASET FOR ADL RECOGNITION USING WRIST-PLACED ACCELEROMETERS

BARBARA BRUNO, FULVIO MASTROGIOVANNI, ANTONIO SGORBISSA

[HTTPS://IEEEEXPLORE.IEEE.ORG/DOCUMENT/6926341](https://ieeexplore.ieee.org/document/6926341)

ACTIVITY MONITORING WITH A WRIST-WORN, ACCELEROMETER-BASED DEVICE

WEN-YEN LIN, VIJAY KUMAR VERMA, MING-YIH LEE, AND CHAO-SUNG LAI

[HTTPS://WWW.NCBI.NLM.NIH.GOV/PMC/ARTICLES/PMC6187390/](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6187390/)



OCTOBER 1

WELCOME 9:30 - 10:00

IMEC LAB & PROJECTS 10:00 - 11:00

INTRODUCTION TO THE IMEC LAB AND PREVIOUS PROJECTS

IMEC'S ROLE 11:00 - 12:00

INTRODUCTION TO THE IMEC'S ROLE IN THE FRAIL PROJECT

LUNCH 12:00 - 13:00

STUDENTS WORK OVERVIEW 13:00 - 14:00

SUMMARIZE & PRESENT THE WORK DONE AT QOLWARE AND TUM

IMEC'S STUDY MATERIAL DISCUSSION 14:00 - 15:00

DISCUSS THE CONTENT OF THE STUDY MATERIAL & IDEAS FOR THINGS TO DO

SENSORS & DATA COLLECTION 15:00 - 17:00

HANDS ON SESSION WITH ACCELEROMETERS & FIRST DATA COLLECTION

OCTOBER 2

MEASUREMENT PROTOCOL 9:30 - 11:00

DEFINE WHAT DATA TO COLLECT, HOW MANY REPETITIONS, ETC. (BASED ON WORK AT QOLWARE AND TUM)

DATA COLLECTION 11:00 - 12:00

COLLECT DATA WHILE PERFORMING SELECTED ACTIVITIES (ADL)

LUNCH 12:00 - 13:00

DATA COLLECTION AND PROCESSING 13:00 - 16:00

CONTINUE WITH DATA COLLECTION AND START WITH DATA PROCESSING

SUMMARY OF THE DAY 16:00 - 17:00

DISCUSS WHAT WAS DONE TODAY AND WHAT NEEDS TO BE DONE TOMORROW

OCTOBER 3

DATA PROCESSING 9:30 - 12:00

CONTINUE WITH DATA PROCESSING AND VISUALIZATION. DETECT DIFFERENT ACTIVITIES (SELECTED ADL)

LUNCH 12:00 - 13:00

MOCKUP OF APP/PRODUCT 13:00 - 16:00

BRAINSTORM, DISCUSS, AND CREATE A MOCKUP OF AN APP/PRODUCT, BASED ON WORK AT QOLWARE, TUM, AND IMEC

SUMMARY OF THE DAY 16:00 - 17:00

DISCUSS WHAT WAS DONE TODAY AND WHAT NEEDS TO BE DONE TOMORROW

OCTOBER 4

MOCKUP 9:30 - 12:00

CONTINUE WORKING ON MOCKUP OF THE APP.

LUNCH 12:00 - 13:00

FINALIZE & SUMMARIZE 13:00 - 15:00

FINALIZE YOUR WORK AND CREATE SLIDES FOR PRESENTATIONS

FINAL PRESENTATION 15:00 - 16:00

FINAL PRESENTATION FOR IMEC GROUP. SUMMARIZE WHAT YOU HAVE DONE AT QOLWARE, TUM, AND IMEC. FEEDBACK, SUGGESTIONS & DISCUSSION.

