



ÖZYEGİN
UNIVERSITY
TECHNOLOGY
TRANSFER
OFFICE

OZYEGIN UNIVERSITY RESEARCH CENTERS / LABORATORIES/ EQUIPMENT

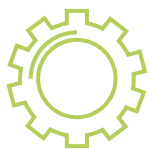


2022

Research Centers

- Alp Alkaş Retail and Real Estate Center
- Applied Research Center of Technology Products
- CEEE: Center for Energy, Environment and Economy
- Entrepreneurship Application and Research Center
- EVATEG: Energy Efficient Electronics and Lighting Technologies Application and Research Center
- FERM: Center for Computational Finance
- German Law Application and Research Center
- Lifelong Education Application and Research Center
- OKATEM: Optical Wireless Communication Center of Excellence
- OpenFab: Makerlab

Research Laboratories



Faculty of Engineering Research Laboratories

- AI@OZU: Artificial Intelligence Laboratory
- Biomechatronics Laboratory
- CCRG: Cloud Computing Research Group Laboratory
- CT&T: Communication Theory and Technologies
- nEMESysLab: Embedded and Microelectronic Systems Laboratory
- OzU Fluid Dynamics and Spray Laboratory
- QOPTICS: Quantum Optics Group Laboratory
- Robotics Lab: Robotics Laboratory
- SpAdvanced Materials Thin Films and CMP Laboratory
- Speech and Natural Language Processing Laboratory
- SRL: Software Research Laboratory
- Vibration and Acoustic Laboratory



Faculty of Architecture and Design Research Laboratories

- Architectural Design Research Laboratory
- Building Materials and Physics Laboratory
- Dynamic Research on Urban Morphology Laboratory
- Landscape Research Laboratory (LRL)
- Media Laboratory
- Spatial System Analysis Laboratory
- Urban and Housing Research Laboratory
- User Experience (UX) Laboratory
- Virtual Reality (VR) Laboratory



Faculty of Social Sciences Research Laboratories

- Child Development and Learning Studies Laboratory
- Cognitive Science Laboratory
- OzU Experiment Laboratory
- OzUGRN: Gender Research Network
- RRL Lab: Relationship Research Laboratory
- Language Cognition and Development Laboratory
- Studies Adolescence and Emerging Adulthood



Faculty of Law Research Laboratories

- Interdisciplinary Child Rights Laboratory

Faculty of Engineering Research Centers/ Laboratories/ Equipment



Center for Energy, Environment
and Economy

Website:

ecem.ozyegin.edu.tr/en

Director:

Prof. M. Pinar Mengüç

CEEE



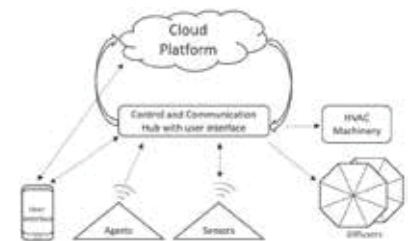
CEEE focuses on research and development projects which will have a lasting impact on sciences, engineering, architecture and on society in general.

Equipment:

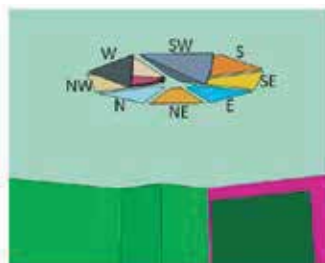
- Thermal comfort measurement systems
- Lighting comfort measurement and monitoring equipment
- Mobile power analyzers
- Internet of Things Workshop (rapid prototyping applications, embedded system development boards, wireless sensor network development components, user interface development tools, etc.)
- Access to database of campus-wide energy management system
- User behavior and energy consumption monitoring system in 18 zones (i.e. Classrooms, offices, study rooms) of 2 academic buildings
- Workstations for computational engineering

Services:

- HVAC system performance monitoring and modeling
- Indoor air thermal comfort and air quality monitoring and modeling
- HVAC interface components development
- Occupant behavior modeling and analysis
- Energy efficient building design in BIM environment
- Visual comfort design in BIM environment



(a)



(b)



Energy Efficient Electronics and
Lighting Technologies Research
Development and Demonstration
Center

Website:

www.evateg.com

Director:

Prof. Mehmet Arık

EVATEG



EVATEG center performs advanced modeling, prototyping and validation to develop ground-breaking technologies.

Equipment / Analysis

Photometric Measurements (TURKAK Accredited)

Integrating Sphere System



With 4 pi and 2 pi measurement capacity, all kinds of LED chips, lamps and Integrated Sphere with sensitivity to measure armatures with the device;

- Total luminous flux (lm)
- Scotopic lumen
- Peak and Dominant wavelength
- Radiometric power
- Color recycling index (CRI, Ra)
- Color temperature (CCT, kelvin)
- UV chromatic coordinate measurement
- Spectrum measurement

served with a wide measurement scale.

Gonio Photometer Device



Photometer capable of measuring from in any desired angle and plane with headed goniophotometer device;

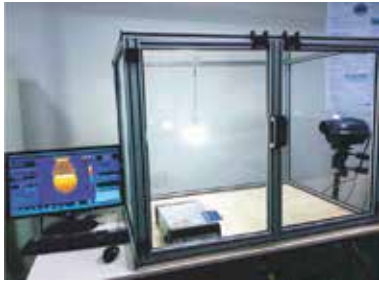
- Total luminous flux (lm)
 - Luminous intensity (cd)
 - Enlightenment intensity (lx)
 - Light distribution values in multiple planes and angles
- measurements are made with great precision.

Photometric measurements are available in various from tables and tables with LTD / IES files are also supported by graphical presentations;

- Polar plots
- Isolux plots
- Cone diagrams
- Utilization factors

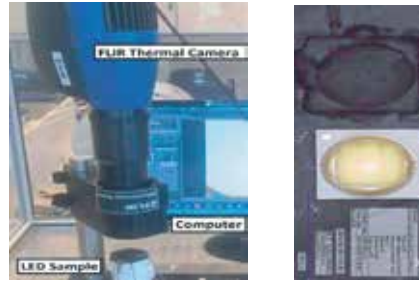
Thermal Measurements

Thermally Controlled Environment



- Nonstop operation with special cooling technology
- Microscopic thermal measurements

LED Package



- Local defect analysis
- Interface measurements and analysis

IR Camera



- 2.5 μm -5.1 μm wavelength thermal imaging in the range
- High reaching 20mK precise measurement results

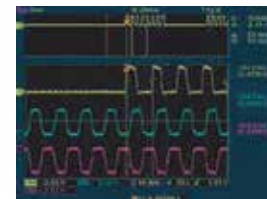
Opto-Thermal and Electrical Measurements

LED Junction Temperature Analysis



- Single and multi- pulsing measurement
- Temperature control and monitoring

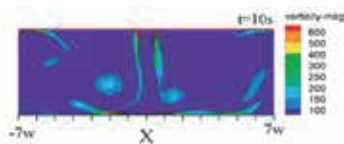
Electrical Characteristics



- V, I and power factor measurements
- Efficiency measurements

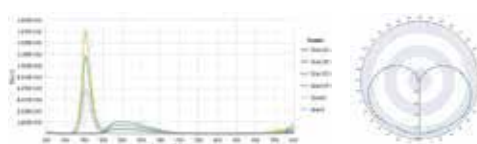
Computational Capabilities

Thermal Analysis



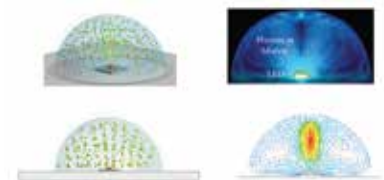
- Advanced thermal and flow modeling
- Thermal solution optimization

Optical Analysis



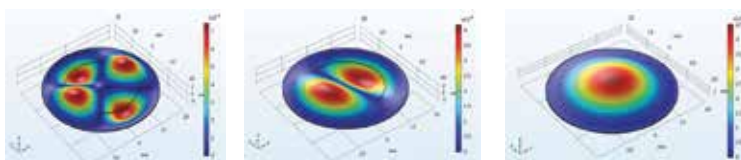
- Advanced optical modeling and validation
- Chip, package and system optimization

Discrete and Multiphase Modeling



- Particle tracking
- Immersion cooling
- Frost formation modeling

Mechanical Analysis



- Local stress analysis
- Deflection and shape change studies

R&D Applications and System Implementation

Phantom V311 / High Speed Camera



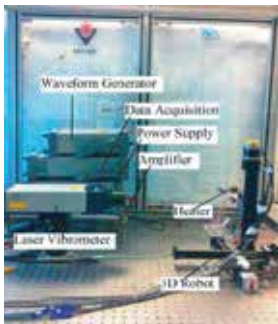
It can shoot up to 3250 frames per second at 1280x800 HD screen resolution and 500000 frames per second at low resolutions.

Laser Vibrometer



OFV-5000 model laser vibrometer, 24MHz frequency range, vibration reaching $\pm 25\text{m/s}$ Non-contact vibration measurements with speed and 0.1 μm displacement sensitivity capability

Microfluidics Cooling Applications

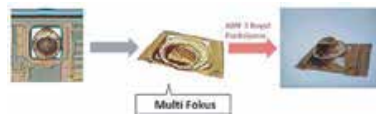


- Miniature cooling
- Patented technology

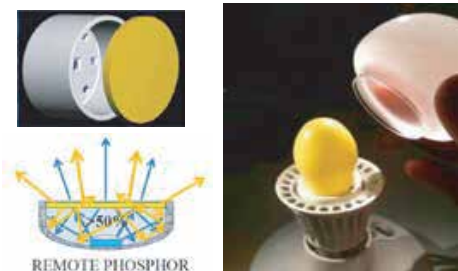
Microscopic Analysis



- Micro surface analysis
- Microscopic defect analysis



Phosphor Coating Strategies



- Selective color temperature
- Color uniformity

Automotive LED Lighting Application



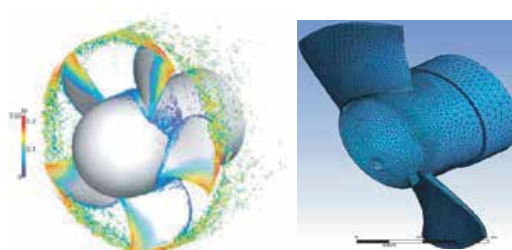
- Compact packaging and thermal management
- Patented isothermal technology

Liquid Cooling Strategies



- High flux thermal management
- Patented uniform cooling

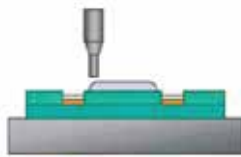
Fan Cooled System



- High efficiency novel cooling
- Microfluidics coupled fan cooling

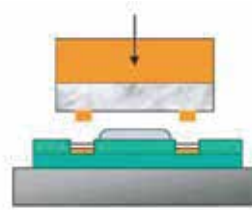
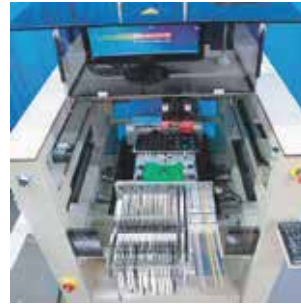
Advanced Electronics Packaging

Inline printer



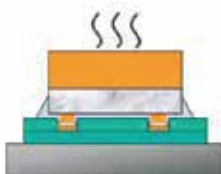
NCP dispensing

SMD system

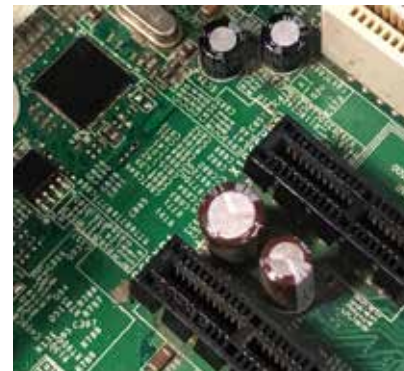


Die attach

Reflow oven



Bonding and Cure



- Defect free packaging of electronics
- Custom packaging approaches

Centre of Excellence in Optical
Wireless Communication
Technologies

Website:

okatem.ozyegin.edu.tr

Director:

Prof. Murat Uysal

OKATEM



OKATEM is Turkey's first R&D laboratory specialized in the emerging area of optical wireless communications. OKATEM was established in September 2015 with a grant from Istanbul Development Agency (ISTKA) and matching funds from Özyeğin University. OKATEM was officially recognized by the Higher Education Council of Turkey (YÖK) as a research center in August 2016. In collaboration with the industry, OKATEM carries out applied research activities in both short- and long-range optical wireless communication systems including free space optical communication, visible light communication and ultraviolet communication.

Equipment:



Oscilloscope

Brand, Model: RTO 1014

Quantity: 1

Number of Channels: 4

Frequency: 1 GHz

Measurement Accuracy: 1% @ 1 mV / Div, 1 GHz



Soldering Iron Station

Brand, Model: WELLER WT 1010

Quantity: 1

Main Unit Power Output: 95 W

Temperature Stability ± 2 C



Hot Air Station

Brand, Model: WTHA 1

Quantity: 1

Main Unit Power Output: 900 W

Temperature Stability ± 54 C

Temperature Range: 50-600 C



Signal Analyzer

Brand, Model: WTHA 1

Quantity: 1

Main Unit Power Output: 900 W

Temperature Stability ± 54 C

Temperature Range: 50-600 C



Software Based Radio Kit

Brand, Model: National Instruments USRP 2930

Frequency Band: 50 MHz - 2.2 GHz

Band Width: 20 MHz

Operating Voltage: 6 VDC



Laser Diode Controller

Brand, Model: THORLABS LDC205C

Control Current Range: 0 ... 500 mA / 10 V

Operating Voltage: 230 VAC



Function Generator

Brand, Model: KEITHLEY 3390

Frequency Range: 50 MHz

Number of Channels: 1

Operating Voltage: 230 VAC



Oscilloscope

Brand, Model: TEKTRONIX MD03109

Number of Channels: 4

Frequency: 1 GHz

Measurement Accuracy: 1% @ 1 mV / Div, 1 GHz

Operating Voltage: 230 VAC



Signal Generator Adapter Module

Brand, Model: NATIONAL INSTRUMENTS AT1212

Data Processing capacity: 14-Bit, 1.2 GS / s

Number of Channels: 1

Operating Voltage: 230 VAC



Function Generator

Brand, Model: KEYSIGHT 81160A

Frequency Range: 330/500 MHz

Operating Voltage: 230 VAC



3D Printer

Brand, Model: Zaxe X1

Print Area: 200 x 200 x 220 mm

Layer Thickness: 100-300 micron

Printing Technology: FFF (Fused Filament Fabrication)

Connection: Wifi, Ethernet, USB

Can Process Materials: ABS, PLA

Maker Lab

Website:

openfab.ozyegin.edu.tr

Manager:

Gölbahar Coşkun

Openfab



Openfab is a common working area where people from different disciplines produce projects, learn and interact with each other. It aims to spread the maker culture with technology and design-oriented trainings, workshops and certificate programs.

Equipment:

3D printers



Zaxe



Makerbot

CNC Router



Tormach PNC 770



Poysan B5490

Laser Cutters



Trotec Speedy 100R



Epilog Helix 24

Desktop CNC Router



Roland SRM-20

3D Scanner



Makerbot Digitizer

Plastic Injection



Morgan Press G-100T

Electrical Measuring



Soldering Iron



Air Compressor



Areas:

- Workshop and Workspace
- Post Processing and PCB Production Area
- Electronic Work and CNC Cutting Area

Production Support:



3D Printing Support



Laser Cutting and Engraving Support



CNC Router Support

AI@OZU

Website:

ailabs.ozyegin.edu.tr

Faculty Members:

Prof. Erhan Öztop

Prof. Ethem Alpaydın

Asst. Prof. Furkan Kırac

Asst. Prof. Reyhan Aydoğan

Artificial Intelligence Laboratory

AI@OZU Laboratory aims to develop all kinds of cognitive systems, intelligent software and hardware that will make our daily lives easier and increase productivity, and to develop the theoretical models and innovative approaches required.

Equipments:



Nao the humanoid and programmable robot

- 25 degrees of freedom
- 7 touch sensors
- 4-way microphone and speaker
- Speaking in 20 languages
- Two 2D cameras
- Programmable platform



Sanbot robot

- Advanced voice interaction system
- High quality speakers
- Communication functions
- Intelligent IoT function

Research Areas:

- Cognitive Robotics
- Computer Vision
- Interactive Intelligent System
- Machine Learning
- Natural Language Processing
- Neural Computation

Biomechatronics Laboratory

Website:

biomech.ozyegin.edu.tr

Faculty Member:

Asst. Prof. Barkan Uğurlu



OzU Biomechatronics Lab.

Biomechatronics Laboratory improves the quality of life of people with physical difficulties.

Equipments:



CoEx: Lower body exoskeleton robot

- 8 degrees of freedom
- Torque controlled
- Serial elastic actuator drive



CoEx-SEA: Series elastic actuator unit

- 160 Nm torque output capacity
- 3.93 mNm torque resolution
- 5 years of continuous operation



Franka Emika Panda: Robot arm

- 7 degrees of freedom
- Force / position control

Research Areas:

- Mechatronic hardware design and production
- Mathematical modeling
- Biomechanically compatible sensor-actuator interface design
- System identification
- Real time controller synthesis
- Motion planning
- Simulation

CT&T

Website:

labs.ozyegin.edu.tr/ctt

Faculty Member:

Prof. Murat Uysal

Communication Theory and Technologies Research Group

Research interests of CT&T are in the broad area of communication theory with a particular emphasis on the physical layer aspects of wireless communication systems in radio, acoustic and optical frequency bands.

Research Areas:

Visible Light Communications (VLC)

- Channel modeling for indoor, vehicular and underwater environments
- High-speed physical layer design for indoor VLC systems
- Resource allocation for VLC networks
- Hybrid MMW/VLC systems
- Massive MIMO VLC
- Underwater VLC
- Vehicular VLC

Free Space Optical (FSO) Communications

- Performance analysis over atmospheric turbulence induced fading channels
- Diversity techniques for FSO systems
- Adaptive FSO systems
- Multi-hop FSO systems
- Hybrid RF/FSO systems

Ultraviolet Communications

- OFDM-based UV communication systems
- Relay-assisted UV communication systems

Underwater Acoustic Communications

- Channel estimation for underwater channels
- Multicarrier underwater acoustic communication



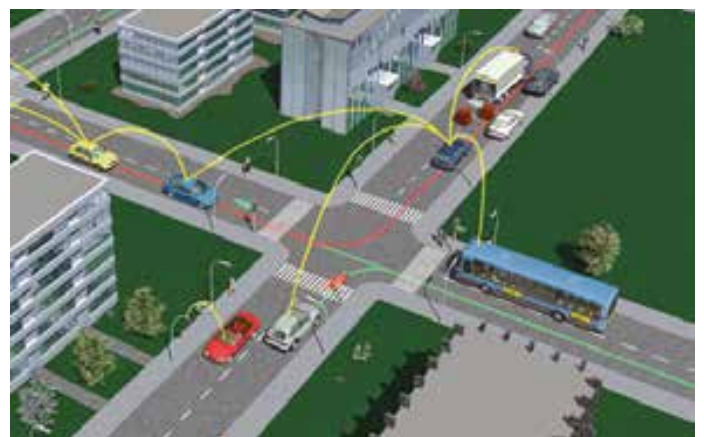
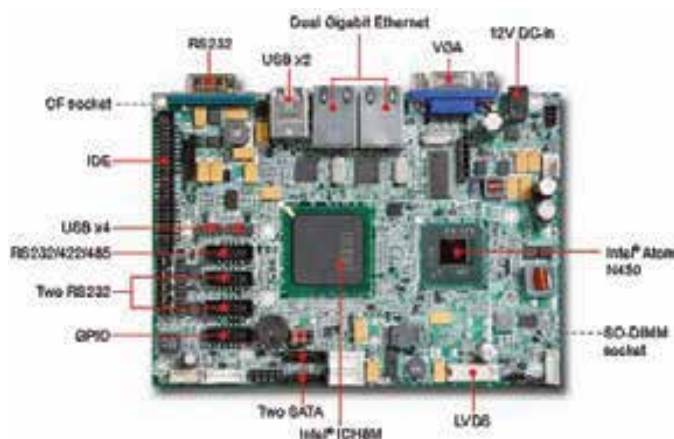
Special purpose logic and processors are designed on FPGA/ASIC, and using these technologies, real-time embedded systems are implemented.

Expertise and Services:

- FPGA/ASIC/SoC design
- Specialized MCU design on FPGA or ASIC
- Real-time embedded systems design
- Design automation
- Verification
- Testing

With Applications in:

- Image/video processing & computer vision
- Communications and networking
- Power electronics
- Algorithm accelerators
- Energy management of electric vehicles



QOPTICS

Website:

labs.ozyegin.edu.tr/qoptics

Faculty Member:

Asst. Prof. Kadir Durak

Quantum Optics Laboratory



Entanglement tests with photon pairs, sources of entangled photon pairs, quantum cryptography and single photon technologies are the research subjects of this laboratory.

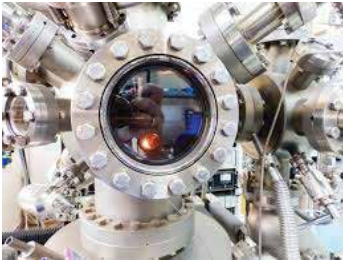
Equipments:



Optical Table



Detector



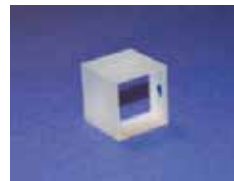
Ultra High Vacuum Chamber



Time Labeling Unit



Narrow Band Interval / Frequency Fixed Lasers

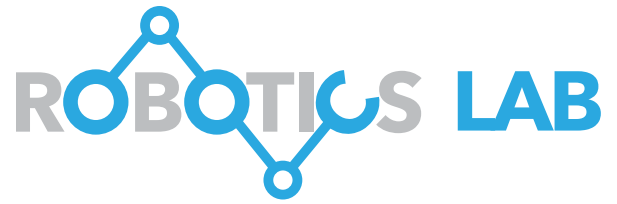


Non-linear Crystal

Website:
robotics.ozyegin.edu.tr

Faculty Members:
Prof. Erhan Öztop
Asst. Prof. Özkan Bebek

Robotics Laboratory



In Robotics Laboratory; medical robotics, intelligent control systems, cognitive work in robotics, humanoid robots, smart mobile machines is carried out.

Equipments:



**Kuka KR6
R900 Sixx Agilus**
Industrial robot arm



**Darwin-OP
Humanoid Research Robot**

- Advanced computing power
- Advanced sensors
- High carrying capacity
- Dynamic mobility



AR.Drone
Flying Robot



**GE Logiq P5
2D Medical Ultrasound**

- Light console
- Image clarity
- Advanced diagnostics



**Gifu Hand III
Anthropomorphic
Robot Hand**

16 degrees of freedom
humanoid hand robot



Universal Robots UR3

- Small footprint
- Light assembly work



Turtlebot

Open source software (ROS)
personal robot kit included
equipment:

- IRobot Create
- Microsoft Kinect



Franka Emika Panda Robot

- 3 kg
- Access up to 855 mm
- Wide viewing angle



3DS Touch Haptic Device

- Scientific or medical simulations
- Interactive education



OptiTrack Motion Capture System

- 8 IR Camera
- 6DoF real time tracking of ground and aerial robotics
- High Speed Shooting - 240



NDI Vega Optical Tracking System

3D position and direction tracking of active or passive markers



Ultimaker 3D Printers

Data collecting:



Quanser Q8



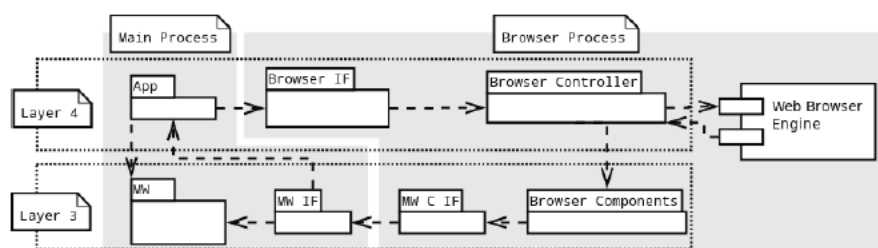
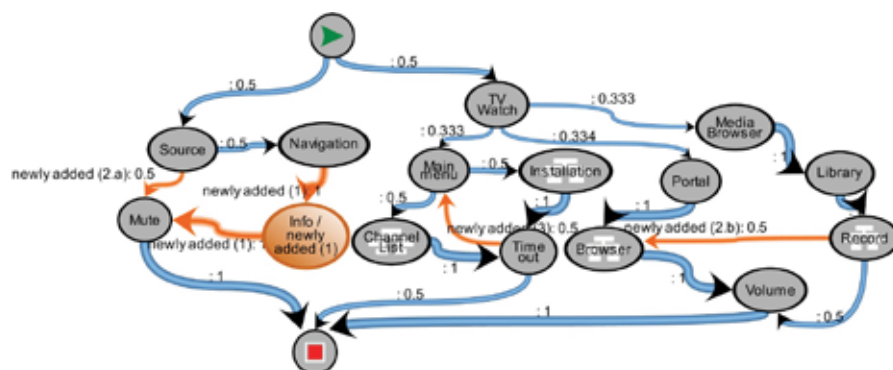
National Instruments SCXI

Software:



Analyses:

- Software test activity analysis and test optimization
- Software architecture analysis, design improvement and recovery
- Software performance, reliability and availability analysis
- Fault-tolerance analysis



Vibrations and Acoustic Laboratory

Website:

val.ozyegin.edu.tr/en

Faculty Member:

Asst. Prof. Polat Şendur

OZU Vibrations and Acoustics Laboratory supports the researchers and students who are concerned about solving engineering problems related to vibrations and acoustics. The laboratory contains various simulation and testing tools to address challenging research problem in the area of vibration, acoustics and multi-body dynamics.

Equipments:



Dewesoft Modal Test and Signal Processing Software



Insulation Connections



Dewesoft Data Collection Device (8 Channels)



Impact Hammer (3 types)
2000 N, 2.5 mV / N



3D ICP Accelerometers (X4) 10K Hz.
100 mV / N

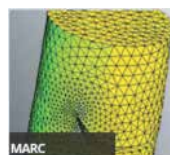
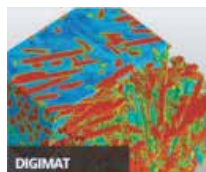


Microphone



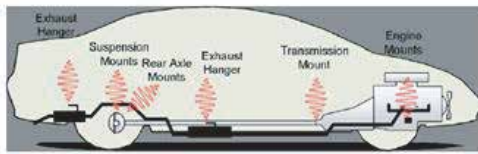
Modal Shaker
220 N

Softwares:



Research Areas:

Vibration and Acoustics

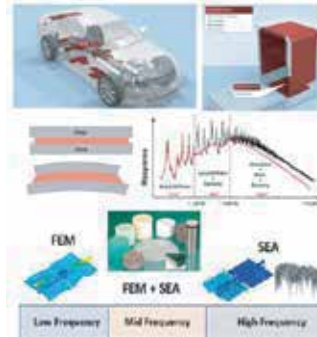


Body/ Chassis Inputs from Powertrain

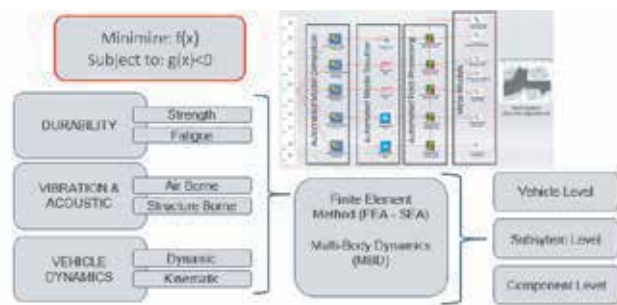


Powertrain Airborne Noise Sources

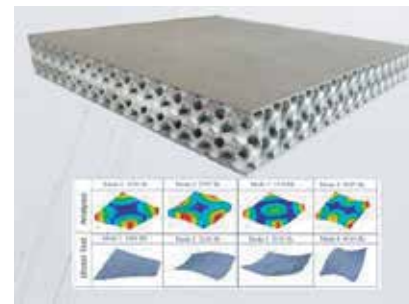
Vibration Characterization and Optimization



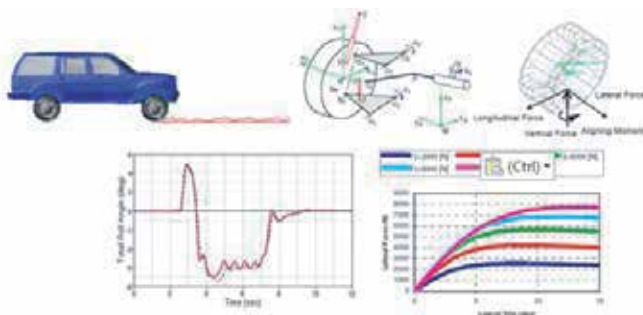
Multidisciplinary Design Optimization (YTS)



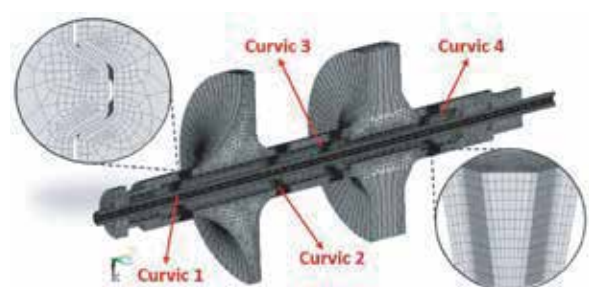
Lightweight Design and Optimization



Vehicle Dynamics



Rotordynamics



Faculty of Architecture and Design Research Centers/ Laboratories/ Equipment



ADR

Website:

labs.ozyegin.edu.tr/adr

Faculty Member:

Asst. Prof. İlker Fatih Özorhon

Architectural Design Research Laboratory



Architectural Design Research Laboratory is a platform that produces theoretical and practical knowledge through design and contributes to the design of qualified living environments.

Goals / Objectives:

The main objectives of the laboratory are to create sharing and production of environments such as seminars and workshops that bring together different actors of the architectural design environment and to develop research projects focused on architectural design.

The laboratory also aims to allow students to experience the different stages and roles of the research and design process and in this direction, cooperates with the architectural design office simulator (MITOS).

Research Areas:

- Architectural design theories
- Space, identity and meaning
- Sustainability
- Ecology
- Local-traditional architectures

Services:

- Cooperation with national and international organizations on related issues
- Architectural Design - Consultancy Services



Building Materials and Physics Laboratory



The Building Materials and Physics Laboratory is aimed to carry out the research studies in the field of “Building Science”. It is also intended to constitute a platform which is either giving related lectures at the undergraduate and graduate levels or providing consultancy to the private and public sector.

Research Areas:

o Building- Energy Studies

- Energy Efficient Building Design and Renovation
- Nearly Zero/Zero Energy Building Design and Renovation
- Energy-Cost Analyses
- Renewable Energy Systems
- Climate Change Adaptation
- Cost Optimum Energy Efficient Building Design and Renovation
- Building Energy Performance Modelling and Detailed Dynamic Simulations
- Consultancy and Energy Modelling Servicing for Various Building Certificate Systems (LEED, BREEAM, ÇEDBİK etc.)

o Sustainable Architecture

- Green Building Design
- Building Materials
- Ecological Architecture
- Lifecycle Analyses
- Indoor Environment Quality (IEQ)
- Occupant Comfort

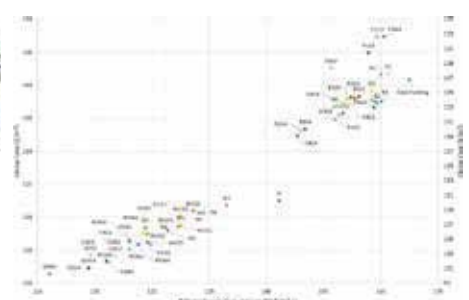
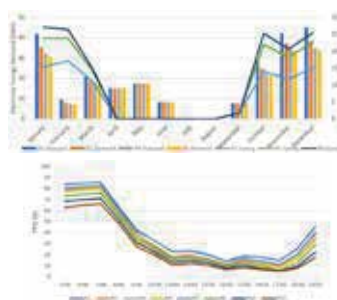
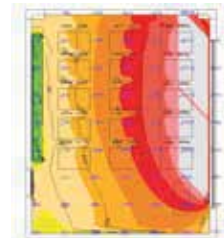
o Lighting in Buildings

- Natural and Artificial Lighting Systems
- Lighting Energy Efficiency
- Visual Comfort

o Building Acoustics

o Energy Efficiency at Urban Scale

- Energy efficiency at Smart Cities
- Heat Islands
- Energy-efficient Site Design



DRUM

Website:

labs.ozyegin.edu.tr/drum

Faculty Member:

Assoc. Prof. Alessandro Camiz

Dynamic Research on Urban Morphology Laboratory

Drum focuses on the diachronic analysis of urban and regional transformation processes.

Analyzes:

The research group aims to describe the dynamics of urban growth in different morphological and geographical environment by comparing a number of relevant case studies in capital cities.

The research group applies;

- the comparative method and GIS,
- space syntax,
- typological plans (Muratorian and Caniggian),
- morphogenetic method (Conzenian)

to understand the past and above all, to design the future of large cities.

Including interdiscipline coordination with disciplines such as Geography, history and archaeology;

- architects,
 - urban planners,
 - urban morphologists
- produce joint studies.



LRL

Website:

labs.ozyegin.edu.tr/lrl

Faculty Members:

Assoc. Prof. Beyza Şat, Ph.D

Asst. Prof. Doğa Dinemis Aman, Ph.D

Asst. Prof. Kaan Özgün, Ph.D

Landscape Research Laboratory



The Landscape Research Lab (LRL) at OzU aims to create a theoretical and applied research platform that facilitates the design of sustainable landscape in both urban and rural environments.

Activities:

The LRL explores and analyzes landscape characteristics, landscape components, and elements in a holistic way.

In an effort to promote healthy communities and challenge epistemological capacities of the subject area, the LRL places its focus on:

- Natural, semi-natural or totally manmade characteristics of landscape,
- Planning,
- Design.

To that end, the LRL aims to work collaboratively to search the contemporary strategies on the relationships between natural environment and the specificities of built infrastructure via education, interdisciplinary research, and innovation for the research areas and their sub themes.

Research Areas:

- **Resilient Cities:** The research area aims to increase the resilience capacity of cities against environmental, social, and economic threats posed by climate change in order to maintain their functions.
- **Green & Blue Infrastructure:** The research area offers a flexible approach for the holistic planning and design of water and landscape elements, which are among the infrastructural components for managing the long-term sustainability of urban ecosystems.
- **Disaster Risk Reduction:** The research area aims to develop new methods and uses for risk reduction and preparedness of cities and regions in order to create disaster resilient societies.
- **Landscape Ecology:** The research area aims to analyze the landscape components of urban and rural infrastructure to offer a holistic approach to landscape planning and design that is centered on sustainability.
- **Landscape Heritage:** The research area aims to conduct interdisciplinary research for the spatial planning and sustainable development of natural and cultural heritages.

OzU Media Lab

Website:

labs.ozyegin.edu.tr/medialab

Faculty Member:

Asst. Prof. Metin Çavuş

Media Laboratory



The Media Laboratory provides a suitable environment and the necessary equipment for research, student studies and lectures on photography, video, documentary and interactive cinema.

Equipment:



Sony HXR-NX100
Video Camera



Nikon D60
Camera



YF Nice Still Life
100x200 cm
Product Shooting Table



Aputure AL-528W
Led Video Light



Visico VC-600HH
Paraflash Kit



Godox Led Photo Cube
80x80x80 cm
Product Tents



Rode NTG-2
Microphone



Dison E-2000II
Led Video Light



Manfrotto 055
Photo Tripod



Manfrotto 755XB
Video Tripod



Zhiyun Smooth 4
Handheld Gimbal



Zhiyun Crane 2
Professional 3
Handheld Gimbal



Zoom H4N
Sound Recorder



Rode Boom
Microphone Rod

Laboratory Features:

- 25 m² shooting area
- High ceiling
- Walls painted in black
- Wall- mounted infinite background x3 (black-gray-white)
- Lastolite Greenbox Green Fabric Curtain 3x7 m

Research Areas:

- Image generation
- Sound production
- Interactive Design
- Film
- Video
- Photography
- Motion Graphic Design
- Animation

Website:

labs.ozyegin.edu.tr/spatialsystems

Coordinator:

Prof. Alper Ünlü

Faculty Member:

Asst. Prof. Nevşet Gül Çanakçıoğlu

Spatial Systems Analysis Laboratory

SSL_spatial systems lab

Spatial System Analysis Laboratory is established to analyze architectural and urban spaces. Researches are carried out with Space Syntax studies.

Research Areas:

The laboratory solves syntactic design problems that arise at all stages of building design, in the case of post- occupation evaluation, or in the project phase as an investment issue.

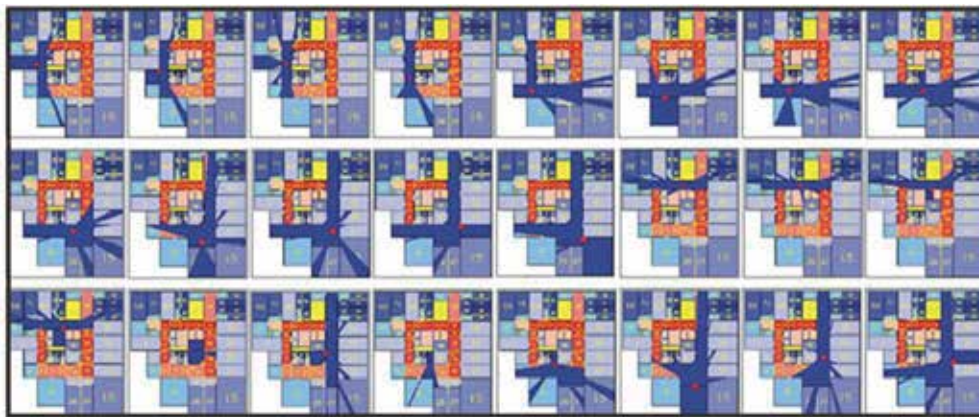


Figure 2: Edgü, E.

To solve human-caused problems in and around public buildings, the laboratory mainly focuses on;

- orientation,
- way- finding,
- evacuation, and
- spetial- cognitive issues.

Aims to solve complex design problems of heavily used public buildings such as hospitals, rehabilitation buildings for the elderly, dormitories, educational buildings, court houses, transportation buildings, or other mixed-use housing or commercial buildings.

UHL Lab

Director:

Prof. Hülya Turgut

Coordinator:

Asst. Prof. Güliz Özorhon

Urban and Housing Research Laboratory



Urban and Housing Research Laboratory, is within the scope of Faculty of Architecture and Design, is a research, education and implementation laboratory that appeals to global and local urbanization issues.

Activities:

With a perspective based on the reflection of current, rapid and multi-dimensional changes and transformations on architectural research and education environment, Urban and Housing Research Lab explores cities in general, with a particular focus on housing issues. The Laboratory aims to respond to the interdisciplinary needs at national and international level as it continuously follows and helps disseminate latest technological developments and knowledge with an unwavering commitment to sustainability, social benefit, and environmental awareness. UHL also endeavors to develop a research and design-based graduate education model through its Master's Program in "City and Architecture".

UHL cooperates with national and international universities, networks and research centers and works closely with the international IAPS-CS 'Culture and Space' Working Network and OzU-SP 'Sustainability Platform'.



Research Areas:

The Laboratory's main research and application areas are centered around sustainability goals.

These are:

- global restructuring and cities,
- city and housing,
- migrations, disasters, healthy cities and housing,
- traditional and vernacular housing,
- settlement and housing designs



OzU VR Lab

Website:

vr.ozyegin.edu.tr

Faculty Members:

Prof. Erhan Öztop

Asst. Prof. Simge Orhun

Instr. Can Bora Sezer

Instr. Elias Sarantopoulos

Virtual Reality Laboratory



ÖzU VR Lab

VR Lab contributes to the fields of Virtual and Augmented reality by designing new applications, educating the next generation of researchers and supporting strong collaborations with industry.

Equipment:



MSI Aegis 3
VR compatible
desktop computer



HTC Vive
VR glasses



MSI NB GT62VR 7RE
VR compatible laptop



Leap Motion
Hand gestures
detecting sensor



HTC Vive Pro
VR glasses



AVerMedia LGP Lite
Video capture card
USB 2.0

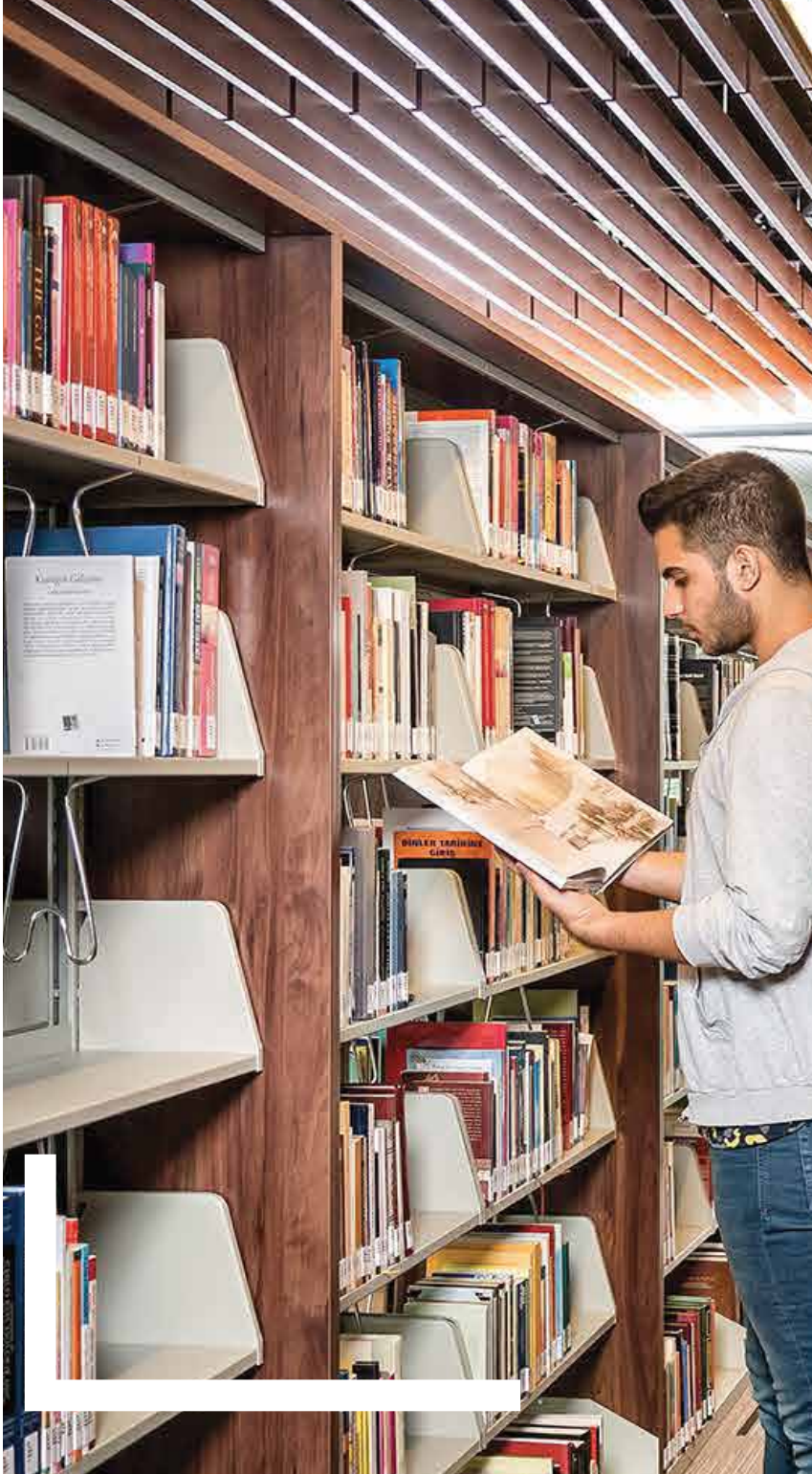
Software:



RealityCapture



Faculty of Social Sciences Research Centers/ Laboratories/ Equipment



Website:

labs.ozyegin.edu.tr/cdll

Faculty Member:

Assoc. Prof. İbrahim Hakkı Acar

Child Development and Learning Studies Lab



The purpose of the research carried out in the Child Development and Learning Studies Lab is to reveal individual and environmental factors affecting children's development and learning.

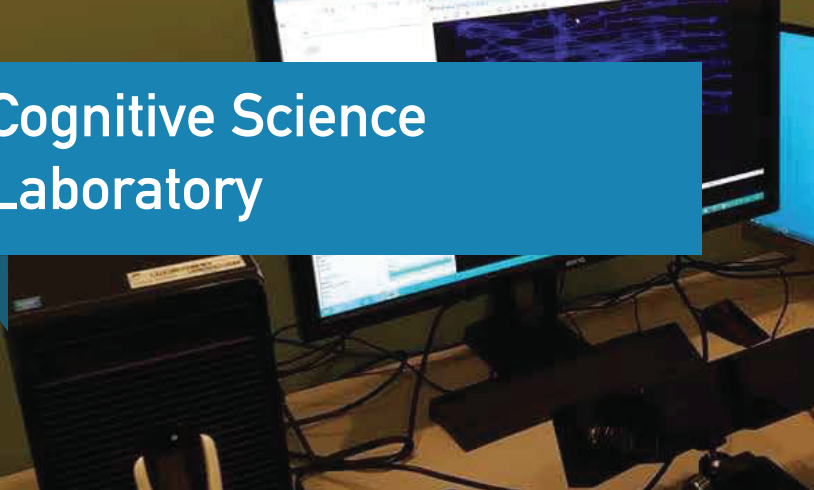
Research Areas:

- To examine protective factors (regulatory temperament, executive functions) and risk factors (difficult temperament, poverty) that affect children's social and academic development
- To investigate children's access to nature and outdoor activities and its contribution to their prosocial behavior and environmental moral reasoning
- To employ natural observation, self-report, and performance-based assessment in research

Applications:

- To organize training for parents and teachers to support children's development and learning
- To develop preventive and protective intervention programs to support children's social emotional development





Cognitive Science Laboratory

Faculty Members:

Asst. Prof. Alper Açık

Asst. Prof. Emrah Aktunç

Asst. Prof. Hakan Karşılar

The Cognitive Science Laboratory conducts behavioral and computational modeling studies on different aspects of human cognition such as perception, attention, memory, reasoning, and problem solving.

Fields of Work:

- Perception of Time
- Visual Attention
- Complex Cognition

Laboratories:

Perception and Action Laboratory

The Perception and Action Laboratory investigates how humans examine the various visual stimuli they encounter with their eye movements. The lab places particular emphasis on visual attention mechanisms.

Complex Cognition Laboratory

The Complex Cognition Laboratory centers its studies on the cognitive processes involved in

- Reasoning
- Problem Solving
- Scientific Inference

Currently, special emphasis is placed on how people process and deal with uncertainty in scientific inference assignments in which they are expected to generate and test hypotheses to solve well-defined problems.

The lab aims to conduct new research studies involving collaborations with other groups and using computational and neuroimaging techniques in order to gain a more complete understanding of the group reasoning processes.

Spatio-Temporal Perception Laboratory

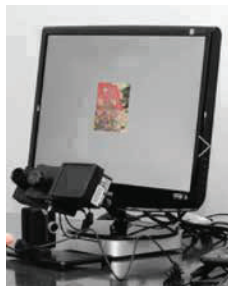
The Spatio-Temporal Perception Laboratory is focused on

- How humans perceive time,
- How they respond to the relationship between the physical universe and time at a perceptual level.

In particular, the effects of changes made to the physical properties and symbolic meanings of visual, auditory and tactile stimuli on human perception and behavior are studied using various behavioral research techniques, especially psychophysical techniques, and various computational models. In order to apply these techniques, high refresh rate monitors and computer systems that can transmit auditory-tactile stimuli with low delay times and high accuracy rates are employed.

In the long run, these studies will also be supported with neurological assessment systems (i.e. tDCS, EEG) and innovative methods such as online data collection.

Equipments:



Eyelink 1000 Plus

- Core unit, high speed camera, host / monitor, wiring
- Desktop mounting with 35 mm lens and 890 nm illuminator
- Remote mode camera



BenQ XL2720Z 27
LED Monitor



Asus ROG SWIFT
24.5", 240 Hz, 1ms
Monitor



Asus Xonar Phoesus
7.1 Channel PCT-E
Sound Card



GeForce GTX
1080 Ti Display Card

Website:

labs.ozyegin.edu.tr/gelisim

Faculty Member:

Asst. Prof. Ercenur Ünal

Language Cognition and Development Lab



LANGUAGE COGNITION & DEVELOPMENT LAB

The Language, Cognition and Development Lab is dedicated to research studies that investigate the relationship of language with other cognitive processes in children and adults.

Research Areas:

- Language acquisition and development in children
- The relationship between language and other cognitive processes in preschool and school age
- Similarities and differences in the cognitive processes of adults with a different native language
- The relationship of gestures with language and cognitive skills



Research Methods:

- Standardized or experimental behavioral assessment of children and adults
- Eye-tracking methodologies
- Cross-linguistic comparisons among individuals with a different native language (i.e. Turkish, Dutch, Turkish Sign Language)
- Gesture Analysis

Website:

ergenlikvegenclik.ozyegin.edu.tr

Faculty Member:

Assoc. Prof. Ayfer Dost Gözkan

Studies in Adolescence and Emerging Adulthood



ÖzÜ Adolescence and Emerging Adulthood Studies Group conducts research studies aimed at investigating the age-related changes that occur during the transition from adolescence to emerging adulthood. The studies are grounded on a positive youth development approach, ecological theory, and self-determination theory.

Research Areas:

- The relationship between the characteristics of close relationships, such as family relationships, romantic relationships and friendships, with positive development
- The relationship between the level of basic psychological need satisfaction in close relationships and the indicators of academic achievement, motivation, identity development, and psychological well-being
- Individual and social factors associated with positive development indicators; emotional socialization and emotion regulation skills in different contexts of social relationships.

In research, both quantitative and qualitative methods are employed based on the nature of the research question.



Faculty of Law Research Centers/ Laboratories/ Equipment



Website:

labs.ozyegin.edu.tr/
cocukhaklaricalismalari

Faculty Member:

Asst. Prof. Sevgi Usta

Interdisciplinary Child Rights Laboratory



The purpose of the laboratory is to produce childhood and child rights-based knowledge with a multiple and interdisciplinary approach in the academy, and also to contribute to the implementation of a child rights-based perspicacity and to transform policies and practices.

Primary Fields of Study:

- Transformative studies of non-right-based practises of children protection
- To examine the effects of rapid urbanization on children and on their rights, and within this framework, to carry out studies with an interdisciplinary and a solution-oriented approach that brings together municipal, national and international stakeholders.
- The investigation of the effects of social and digital media on childrens' rights and its development

When the laboratory reaches sufficient development, it aims to continue its studies by transforming into an Age Studies Laboratory and including attention to the elderly in its work.

Activities:

Child Rights Network in Academia (CRNA)

The network aims to provide education and research in academy, to influence decision makers in practice and by help of supporting activities, to strengthen rights of children concept, and lastly, to help popularization of researches about rights of child throughout the whole country.

Child Protection and Justice System Transformation Studies

Searching for cooperation opportunities and preparing training activities for a full implementation from the perspective of child-friendly judgment, in which the Child-Friendly Justice Guide adopted by the Council of Europe is accepted as the criterion, legal processes and the current situation in the trial that concern or affect children, and the solution proposals in this regard and the academy's child-friendly trial before, during and after the trial.

Child Rights Studies Postgraduate Thesis Award

Özyeğin University Faculty of Law, Interdisciplinary Children's Rights Laboratory, Child Rights Studies and Raoul Wallenberg Institute in partnership with the Lund University Postgraduate Thesis Awards will be given. In this context, as of 2020, completed graduate thesis on Children's Rights in Turkey that selected by the scientific committee will be awarded with the prize board. This award aims to encourage postgraduate scientific research based on education law in universities.

Child Rights Education Studies

Children's Rights Education Studies work with children, both directly and indirectly, to offer a general theoretical framework to professional groups, institutions and organizations and respond to their training needs in their respective areas.

Ad Hoc Collaborations

In order to transform a practice that is against the benefit of the child, it carries out joint studies with academia and professional organizations that transform the practice and change the law for the solution of a specific problem. The laboratory is open to the cooperation callings of public institutions and organizations, professional organizations and non-governmental organizations.

Child Rights Clinics

It aims to contribute to the realization of children's access to justice and fair trial right and to the development of professional knowledge, skills and values of students from different disciplines by taking part in the studies of real cases related to children. It also underlines the fact that, like all services related to children, cases can be handled with multidisciplinary and / or interdisciplinary work. Clinical Research of Child Right is open to the cooperation callings of public institutions and organizations, professional organizations and non-governmental organizations.





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