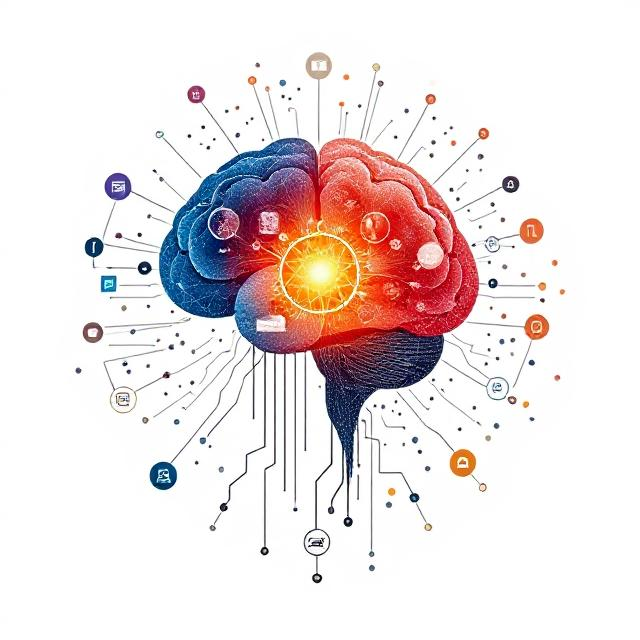
**CURRICULUM**

**CURRICULUM**

**Master of Social Work**

**In Psychosocial Software Engineering**

**(MSW-PSE)**



****

**2025**

**Addis Ababa, Ethiopia**

CURRICULUM

Master of Social Work

In Psychosocial Software Engineering (MSW-PSE)

School of Social Work

College of Social Sciences, Arts and Humanities

and

School of Information Technology Engineering

College of Technology and Built Environment



Addis Ababa University

August 2025

ADDIS ABABA

**Executive Summary**

The Master of Social Work in Psychosocial Software Engineering (MSW-PSE) is a pioneering interdisciplinary graduate program designed to equip students with the unique ability to integrate psychosocial knowledge and software engineering expertise. This two-year, 120-ECTS program is structured around outcome-based education and aligned with international standards, including the Bologna Process and the European Standards and Guidelines (ESG) for quality assurance. The curriculum is designed to produce ethical, technically skilled, and socially conscious professionals capable of developing scalable, inclusive digital solutions for mental health and social well-being. Students engage in foundational training in software development, data analytics, mobile and web platforms, and cloud technologies, all contextualized within human-centered design and psychosocial principles. Through a combination of theory, applied practice, and a 30-ECTS capstone project, graduates will demonstrate competencies in programming, stakeholder engagement, ethical compliance, and community-embedded innovation. The program also emphasizes quality assurance through systematic auditing, faculty evaluation, student feedback, external reviews, and collaboration with professional associations. It prepares graduates for impactful careers in digital social services, mental health tech, nonprofit innovation, and responsible AI application, both locally and globally.

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# **Background**

The Master of Social Work in Psychosocial Software Engineering [MSW-PSE] program stands as an innovative initiative crafted to bridge the critical gap between technology and human-centered design. Its purpose is to empower students from social work and psychology with the essential knowledge and skills necessary to construct systems that prioritize user well-being, ethical integrity, and societal impact. The program aims to infuse a deep sense of social responsibility into the development of technological solutions by leveraging software engineering as a foundational platform.

In contrast to traditional software development paradigms that often prioritize functionality and efficiency above all else, the MSW-PSE program takes a comprehensive approach that delves into how technology influences human behavior and society at large. The program seeks to instill the capacity to design inclusive, ethical, and socially conscious solutions that resonate with diverse user populations by cultivating a cohort of educators, researchers, and service providers.

This interdisciplinary program serves as a conduit for the future for students from fields such as social work, psychology, public health, and education to acquire cutting-edge development skills alongside a profound understanding of psychosocial dynamics. Equipped with this dual proficiency, graduates are equipped to develop ethical, human-centered digital systems that cater to mental health, behavioral intricacies, and societal impacts with a heightened sensitivity to human experience.

At its core, MSW-PSE reimagines the landscape of software engineering by centering human and societal needs as fundamental to technological advancement. Graduates emerge not merely as proficient coders but as responsible innovators adept at navigating the intricate intersections of social sciences, education, health, technology, ethics, and beyond. The MSW-PSE envisions a future where technology serves as a force for inclusive progress and societal well-being by championing equity, safety, and empowerment in the digital realm. The curriculum was initiated by navigating through critical phases including review of relevant background literature, conduct needs assessment and holding stakeholders consultative workshop.

# **2. NEEDS ASSESSMENT AND CONSULTATIVE WORKSHOP OVERVIEW**

A needs assessment survey was conducted by preparing a questionnaire consisting of both quantitative and qualitative questions. A survey of monkey online data collection techniques was used to gather data from potential respondents. From a total of 50 distributed questions, 45 (90%) responses were gathered and analyzed. Key focuses of the needs assessment survey include:

* Basic profiles of respondents.
* Respondents’ familiarity with and the demand for psychosocial software engineering.
* Program demand and employability.
* Prioritization of curriculum topics.
* Program feasibility and personal interest.
* Key challenges and suggestions

The profiles of respondents indicate that from the 45 of them, 68.9% were with post-graduate qualifications (53.3% master’s and 15.6% PhD). Regarding respondents’ qualifications, nearly half of them (51.2%) were drawn from social work and psychology and 11.1% from computer science. The rest were from diverse disciplines. While 64.4% of the respondents claimed they are familiar with the concept of “psychosocial software engineering, the remaining 35.6% reported not familiar with the concept. All the respondents (100%) reported digital skills are important in some way for their professional fields. As a result, the demand for psychosocial software engineering is supported by 84.4% of the respondents. With respect to demand, respondents also reported about employability of graduates. Accordingly, 31.1% reported there exists high employability while 44.4% reported moderate employability. The strong perceived demand and positive employability outlook suggest the program could attract a diverse student body and produce graduates well-positioned for varied career paths.

Respondents were asked to prioritize key topical areas to include in the MSW-PSE program. The six topical areas in the MSW-PSE curriculum, which ranked as 1st priority by survey respondents are summarized in the Table below.

**Table 1: Topics ranked 1st priority by survey respondents**

|  |  |
| --- | --- |
| Topic | % of respondents ranked 1st a topic |
| Digital mental health intervention | 28.9 |
| Data privacy and ethics in social work practice | 24.4 |
| Human computer interaction (HCI) | 20.0 |
| Software development for social impact | 20.0 |
| Psychosocial assessment in tech environments | 17.8 |
| Ethical AI and algorithmic bias | 13.3 |

As indicated in Table 1 above the prioritization of Digital Mental Health Interventions (28.9%) and Data Privacy (24.4%) reflects a strong demand for practical, ethically grounded skills, guiding curriculum development.

Of all respondents, 95.6% reported the envisaged MSW-PSE program is feasible, though the responses were at various degrees (example, 42.2% reported very feasible and 31.1% reported feasible). And 86.7% reported they are personally interested in the program, demonstrating the feasibility of the program. Majority of the respondents (68.9%) preferred hybrid learning (online and in-person), and regarding program duration still majority (53.3%) choose a standard two-year program, whereas 28.9% preferred flexible (parttime) program. The preference for hybrid delivery (68.9%) and flexible scheduling (28.9%) suggests the need for accessible, adaptable program structures. To understand relationships between key survey questions, a multivariate analysis was conducted using Spearman’s rank correlation to examine questions with similar formats. The analysis focused on program feasibility, importance of digital kills, demand for combined skills, and personal interest, as these use comparable response scales. Significant correlations are observed (See Annex F). To cite one example of the significant results of the multivariate analysis, the following summary demonstrates well. The strong correlation (0.62) between ***Program Feasibility and Personal Interest*** suggests that respondents who view the program as viable are highly motivated to enroll. This aligns with the 57.8% ***Very Interested*** and 73.3% ***Very Feasible/Feasible*** responses, indicating that addressing feasibility concerns (e.g., funding, instructors, etc.) boost enrollment.

Open-ended questions were added to ask respondents to indicate key challenges that the MSW-PSE program would encounter. ***Resource availability*** was reported as one of the challenges the program will encounter. In this regard, 55.6% reported funding would be a challenge and 48.9% indicated infrastructural related challenges such as labs, internet access, etc. The second domain of challenges reported was related to ***disciplinary integration***. Accordingly, curriculum complexity (combining/bridging social sciences with technical fields) was reported by 44.4% of the respondents as a potential challenge. The third reported domain of challenge was related to ***resistance to change***. This fear was related to a pushback from traditional academic stakeholders and practitioners worry of interdisciplinary approach as reported by 46.7% of respondents. Respondents were also asked to suggest ways to address the above-described domains of challenges. The three key suggestions forwarded to culminate the challenges are:

* Develop an interdisciplinary curriculum with practical modules like Human-Centered Design and Digital Ethics, supported by bridging courses for non-tech students.
* Partner with NGOs, government, and tech firms for real-world projects and internships.
* Train faculty in interdisciplinary methods to bridge psychosocial and technical expertise.

The overall conclusion from the needs assessment is that the result offers a clear indication for the design and implementation of the master’s program in Psychosocial Software Engineering. The convergence of high demand (84.4%), strong belief in digital skills (71.1%), and personal interest (57.8%) highlights a critical gap in Ethiopia's educational and professional landscape. The program should prioritize a hybrid, flexible delivery model (68.9%) and focus on high-demand topics like Digital Mental Health Interventions (28.9%) and Data Privacy (24.4%).

In addition to the Needs assessment survey, a stakeholders’ workshop was conducted on July 10, 2025, drawing various stakeholders from government, NGOs, bilateral organizations, professional associations, and private tech companies. Key stakeholders participated in the workshop include Ethio-Telecom, Ministry of Innovation and Technology, Africa Union Commission (AUC), UNICEF, Arica CDC, and Addis Ababa University. Two private companies participated in the workshop were Aha Psychological services and Cog Labs. The Ethiopian Social Work Professionals Association also attended the workshop. The workshop brought great opportunity to bring various sectors (government, NGOs, private sector and academic institutions) together to reflect on the importance of launching such a brand new interdisciplinary academic program. The key outcome of the stakeholders’ workshop includes the following:

* It brought together academics, practitioners, institutional leaders, and stakeholders who critically engaged with the proposed curriculum while expressing strong optimism for its potential impact.
* Offered valuable insights for further development and implementation of the MSW-PSE program
* Laid a strong foundation for interdisciplinary collaboration, national relevance, and long-term societal transformation.
* Illustrated the urgency and relevance of the issues the program aims to address.
* Shared aspiration that the program should evolve into a continental model, positioning Ethiopia as a leader in academic innovation for psychosocial and technological integration across Africa.
* Established advisory committee consisting of delegates from governmental organizations, bilateral agencies and private technological institutions which will technically support the launching and successful operation of the MSW-PSE five year project.

# **RATIONALE**

The growing societal demand for humane-technology interaction underscores the urgent need for this program. Digital tools, from psychosocial and mental health apps to inclusive education platforms, increasingly require developers who possess not just technical coding expertise, but deep training in human-centered design, behavioral psychology, and social equity. At the same time, the technology sector faces mounting ethical crises, from biased algorithms that perpetuate discrimination to addictive interfaces that compromise well-being, revealing a critical gap in traditional computer science education that fails to address technology's psychosocial consequences.

This program responds through purposeful interdisciplinary innovation, bridging software engineering with psychology, social work and social theory to pioneer a new generation of responsible programmers. This program is designed to train professionals capable of transforming how technology interacts with human vulnerability, diversity, and dignity, moving beyond technical functionality to prioritize societal benefit and ethical integrity from the ground up.

# **PROGRAM VISION**

To cultivate a new generation of interdisciplinary professionals who integrate social work, psychology and software engineering to design ethical, inclusive, and impactful digital technologies for psychosocial well-being.

# **PROGRAM MISSION**

To produce competent graduates with a strong foundation in psychosocial theories, digital technologies, and human-centered design to develop digital solutions that prioritize human dignity, mental health, social equity, and data ethics.

## Excellence

To deliver a rigorous, interdisciplinary education that merges advanced software engineering with the behavioral, social, and health sciences. The curriculum empowers students to design human-centered technologies, from psychosocial and mental health platforms to inclusive digital systems, while mastering all psychosocial intervention, service delivery, monitoring and evaluation (e.g., behavioral analysis, ethical auditing) and technical implementation (e.g., cloud computing, AI fairness tools, etc.).

## Innovative Research

To pioneer solutions that address societal challenges at the intersection of human well-being and technology. Through collaborations with educators, researchers, NGOs, civic societies, social service providers, and policymakers, students and faculty develop service user friendly algorithms, and accessibility-first tools ensuring research that guarantees into real-world impact.

## Community Engagement and Services

In addressing community engagement as one of the AAU’s strategic pillars, this program aims to serve vulnerable populations in need of digital psychosocial services, by co-designing digital technology with social workers and psychologists. The program partners with international, regional, and national organizations to deploy digital equitable education technologies, efficient data analysis capacities, psychosocial and mental health interventions, and crisis support systems.

## Diverse Stakeholder Development

Diverse stakeholders are involved ultimately in fostering an inclusive learning environment where students from social work and psychology collaborate.

In the future the program shall prepare graduates for hybrid roles such as clinical software developers, digital ethics specialists, and social impact architects by offering flexible pathways (e.g., clinical tech tracks, policy-focused modules).

Through these missions, the MSW-PSE program aims to redefine technology’s role in society prioritizing empathy, equity, and ethical innovation in every line of code.

# **Program Outcomes (POs)**

Upon completion of the program, graduates will demonstrate the following program outcomes:

**PO1:** Mastery of psychosocial and behavioral theories relevant to technology-enabled mental health interventions.

**PO2:** Ability to independently develop secure, scalable, and user-centered digital tools (web, mobile, AI) for psychosocial services.

**PO3:** Capacity to assess and design for ethical, cultural, and accessibility requirements in software systems.

**PO4:** Competency in applying interdisciplinary research methods, including needs assessments and impact evaluations.

**PO5:** Effectiveness in leading and contributing to cross-functional teams in service of social good.

**PO6:** Knowledge of and ability to comply with global data protection, health privacy laws, and digital governance frameworks.

**PO7:** Capacity to critically reflect on the social, emotional, and psychological impacts of emerging technologies.

**PO8:** Readiness to engage in lifelong learning and advocacy in digital social innovation.

# **Program Learning Outcomes (PLOs)**

Graduates of the MSW-PSE program will be able to:

1. Apply foundational knowledge in social work, psychology, and mental health to the design of digital systems.
2. Demonstrate proficiency in programming and software development tools for psychosocial applications.
3. Design and evaluate human-centered, ethical, and inclusive digital solutions.
4. Analyze psychosocial needs and translate them into technical requirements.
5. Collaborate effectively with interdisciplinary teams and stakeholders.
6. Integrate AI, data analytics, and secure cloud solutions to address real-world social issues.
7. Adhere to national and international legal, ethical, and regulatory standards in digital social services.
8. Demonstrate reflective practice and community-engaged research through service-based learning.

# **POs and Core Courses Mapped to PLOs**

## Mapping Matrix of POs to PLOs

**Table 2: POs to PLOs Mapping**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PO \ PLO** | **PLO1** | **PLO2** | **PLO3** | **PLO4** | **PLO5** | **PLO6** | **PLO7** | **PLO8** |
| PO1 | X |  |  | X |  |  |  | X |
| PO2 |  | X | X |  |  | X |  |  |
| PO3 |  |  | X |  |  |  | X |  |
| PO4 |  |  |  | X |  |  |  | X |
| PO5 |  |  |  |  | X |  |  | X |
| PO6 |  |  |  |  |  | X | X |  |
| PO7 |  |  | X |  |  |  | X |  |
| PO8 |  |  |  |  | X |  |  | X |

## Mapping Core Course to PLOs

**Table 3: Core course to PLO mapping**

|  |  |  |
| --- | --- | --- |
| ****Course Title**** | ECTS | PLOs |
| Digital Social Work and Mental Health Foundations | 6 | 1, 4 |
| Human-Computer Interaction & User-Centered Design | 6 | 3, 4, 5 |
| Intermediate Python for Psychosocial Applications | 6 | 2, 6 |
| Databases and Data Security for Psychosocial Services | 6 | 2, 6, 7 |
| Psychosocial Aspects of Technology and Digital Ethics | 6 | 1, 3, 7 |
| Agile Development and Project Management | 6 | 5, 6 |
| Mobile App Development | 6 | 2, 3, 6 |
| Advanced Web & Mobile Frameworks | 6 | 2, 6 |
| APIs and Integration for Health Solutions | 6 | 2, 6, 7 |
| Community-Centered Design Studio | 6 | 3, 5, 8 |
| AI and Machine Learning for Psychosocial Interventions | 6 | 2, 6, 7 |
| Low-Code/No-Code Prototyping Tools | 6 | 2, 3 |
| Cloud Computing & Scalable Deployment | 6 | 2, 6, 7 |
| Testing, Debugging & Quality Assurance | 6 | 2, 6 |
| Cybersecurity and Policy Compliance | 6 | 6, 7 |
| Capstone Project | 30 | 1,2,3,4,5,6,7,8 |

# **PROGRAM OBJECTIVES**

## General Objective

The primary goal of the MSW-PSE program is to establish a two-year graduate-level program in Psychosocial Software Engineering in Addis Ababa University and train 100 students in the five-year project period as the first generation of Psychosocial Software Engineers that fosters innovation at the intersection of psychology, social work, and technology. This program will develop psychologists and social workers who can design AI-driven psychosocial and mental health solutions, digital counseling platforms, and technology-based social work interventions while ensuring ethical, culturally sensitive, and evidence-based applications. Key contributions of the program include:

* Enhancing Ethiopia’s capacity for digital psychosocial and mental health innovation by training professionals who can leverage AI, machine learning, and mobile technologies to develop scalable interventions.
* Strengthening the psychosocial and mental health service sectors through the integration of data-driven decision-making and predictive analytics in social work and psychology.
* Addressing the shortage of social work and psychology professionals by using technology to expand service accessibility, particularly in underserved and rural areas.
* Promoting interdisciplinary collaboration between psychologists, social workers, and software engineers, ensuring that technology is developed with a deep understanding of human behavior and social needs.

## Specific Objectives

To achieve this overall goal, the project is designed with the following specific objectives:

* Plan, design, develop and implement digital psychosocial services.
* Develop digital platforms, such as mobile counseling apps and tele-psychosocial services, etc., to improve access in rural and underserved populations
* Design digital psychosocial services to guarantee equitable access to services through low-cost, AI-assisted digital interventions that reach vulnerable populations.
* Ensure the development of a multidisciplinary team with expertise in social work, psychology and software engineering, ensuring the sustainability of the specialization.

# **GRADUATE PROFILE**

Graduates of the Master of Social Work in Psychosocial Software Engineering [MSW-PSE] program will emerge as versatile professionals equipped with a unique combination of technical expertise and human-centered competencies. They will possess:

## Intellectual Skills

The ability to critically analyze the societal implications of software systems, evaluate ethical dilemmas in technology design, and apply evidence-based frameworks to assess human-computer interactions. Graduates will demonstrate advanced reasoning in balancing technical possibilities with psychosocial considerations, ensuring their solutions prioritize human wellbeing alongside functionality.

## Professional Skills

The program aims at creating mastery of industry-standard tools and methodologies, including programming languages for system development, collaborative software engineering practices, and human-centered design principles.

Graduates will be proficient in implementing technical solutions while maintaining awareness of accessibility standards, inclusive design practices, and ethically responsible innovation approaches.

## Transferable Abilities

The program aims at the transferability of exceptional capacity for interdisciplinary collaboration, enabling effective communication across technical and non-technical domains.

Graduates will excel at stakeholder engagement, participatory design processes, and translating complex psychosocial concepts into actionable technical requirements. Their adaptive skillset prepares them to navigate evolving challenges at the intersection of technology, personality, and society.

This holistic combination of attributes ensure graduates can lead the development of technology that is not only functionally robust but also socially responsible and psychologically informed. They will be prepared to bridge the gap between technical teams and diverse stakeholders, advocating for human needs throughout the software development lifecycle while delivering innovative and ethical solutions.

# **GRADUATE COMPETENCIES**

## Overall Competency

A graduate who completes this program will be able to:

* **Write functional, secure, and scalable code independently**
* **Develop both web and mobile applications tailored for psychosocial services**
* **Integrate APIs and AI-driven features (like chatbots, predictive analytics)**
* **Ensure data privacy and ethical compliance**
* **Manage full project lifecycles, from ideation to deployment**

## Specific Competencies

**11.2.1 Programming Foundations & Proficiency**

* **Courses like Python Programming, Intermediate Python, Advanced Web & Mobile Frameworks, and APIs & Integration build solid coding proficiency.**
* **React, Django, Node.js, React Native, Flutter equips students to develop full-stack web and mobile applications.**
* **Students will know how to write, debug, test, and deploy code independently.**

**11.2.2 Application Development for Psychosocial Services**

* **Human-technology Interaction and Community-Centred Design ensure that apps are user-friendly and tailored to psychosocial needs.**
* **Mobile App Development, Low-Code/No-Code, and Advanced Frameworks provide tools to rapidly create prototypes and production-grade apps.**
* **They will be able to build apps for digital counselling, psychosocial monitoring, mental health assessments, and social work service delivery.**

**11.2.3 Data Handling & Security**

* **Databases and Data Security for Psychosocial Service Applications, Cloud Computing, and Cybersecurity and Policy Compliance equip students to handle sensitive user data securely and within regulatory frameworks (including data encryption, user authentication, and GDPR/HIPAA-like compliance).**
* **They can implement data-driven features like progress tracking, predictive analytics, and real-time decision-making tools.**

**11.2.4 AI & Machine Learning for Psychosocial Applications**

* **AI and Machine Learning for Psychosocial Interventions trains them to design and implement AI-driven features (e.g., chatbots, predictive diagnostics, risk assessments).**

**11.2.5 Agile, DevOps, and Project Management**

* **Agile Development and Project Management, Testing & Debugging, and Scalable Deployment prepare students to manage projects from ideation to deployment in real-world contexts, including social service organizations.**

**11.2.6 Ethical, Social, and Regulatory Awareness**

* **Psychosocial Aspects of Technology & Digital Ethics, Community-centred Design, and Cybersecurity and Policy Compliance ensure students understand ethical design, user privacy, and culturally sensitive practices.**

**11.2.7 Capstone Project for Independent Practice**

* **The 30 ECTS Capstone Project ensures that students demonstrate independent project planning, development, and deployment skills in a psychosocial context (e.g., a mental health app, a digital counselling platform, or a social service dashboard).**

# **PROGRAM REQUIREMENTS**

## Admission Requirements

1. Bachelor’s degree and above in Social Work and Psychology.
2. Fulfill the prerequisite requirements set by the Addis Ababa University Office of the Registrar. Such requirements include passing the GAT examination.
3. Undergraduate Cumulative Grade Average of at least 2.75.
4. Pass the oral interviews administered by the admission committee of the SSW. Demonstrating interest in human-tech intersections to be assessed through individual interview
5. Take the two-pre-requisite course and score passing marks on Python and Java upon admission by fulfilling the above criteria

Since students will be admitted to the program with social work and psychology background, the prerequisite course work will be given to provide them with basic programming proficiency. Hence, joining the program students will be required to attend a three-month hour prerequisite course work in Python and Java.

# **DURATION OF THE STUDY**

The Master of Social Work in Psychosocial Software Engineering [MSW-PSE] is a two-year, full-time program (120 ECTS[[1]](#footnote-1)) structured across four terms  to systematically integrate technical and psychosocial expertise.

The first year establishes core competencies in human-centered Software Engineering, Social Work and Psychology. The second year enables specializing in software programming through technical courses and applied research culminating in the industry capstone project.

This balanced duration ensures graduates develop both the technical proficiency to build robust systems and the critical perspective to evaluate their societal impact, preparing them for leadership roles at the intersection of technology and human needs.

# **GRADUATION REQUIREMENTS**

To complete the study and graduate with the Master of Social Work in Psychosocial Software Engineering (MSW-PSE). It is compulsory for all candidates to complete the following courses and earn a cumulative point according to the AAU’s grading policy.

* + **Coursework (90 ECTS):** Includes advanced labs and the integration of psychosocial services contents and the digital technology and tools (e.g., cloud deployment, accessibility audits).
  + **Capstone (30 ECTS):** Industry/human service agency internship with deliverables. Deploy software product

# **DEGREE NOMENCLATURE**

The Nomenclature of the degree is

**“The Degree of Master of Social Work in Psychosocial Software Engineering (MSW-PSE).**

**Its equivalence in Amharic is**

**“የሶሻል ዎርክ ማስተርስ ዲግሪ በሳይኮሶሻል ሶፍትዌር ኢንጅነሪንግ”**

# **LEARNING-TEACHING METHODS AND GENERAL ASSESSMENT BREAKDOWNS**

Active learning, Gap lectures and demonstrations, six months field work with integration of internship with IT developers and psychosocial service providers are key requirements as the teaching-learning methodology. The overall student performance assessment fell under the following categories.

* 50%: Software deliverables (e.g., prototype, deployed app, etc.).
* 35%: Psychosocial analysis (e.g., ethics report, user study, etc.).
* 15% Peer reviews.

# **COURSE EVALAUTION AND GRADING**

## Course Grading

As stipulated in the revised version of the Addis Ababa University Senate Legislation (2024), course evaluation shall be graded on the ranking system, with corresponding grading scales and letter grades, in the table below:

**Course evaluation and grading**

|  |  |  |
| --- | --- | --- |
| Raw Mark | Letter Grade | Grade Points |
| [95, 100) | A+ | 4.00 |
| [85, 95) | A | 4.00 |
| [80, 85) | A- | 3.75 |
| [75, 80) | B+ | 3.50 |
| [70, 75) | B | 3.00 |
| [65, 70) | B- | 2.75 |
| [60, 65) | C+ | 2.50 |
| [50, 60) | C | 2.00 |
| [40, 50) | D | 1.00 |
| < 40 | F |  |

## Capstone/Thesis evaluation and Grading

As stipulated in the revised version of the Addis Ababa University Senate Legislation (2024), thesis evaluation shall be graded on the ranking system, with corresponding grading scales and letter grades, in the table below:

**Thesis Evaluation and Grading**

|  |  |  |
| --- | --- | --- |
| **Rank** | **Grading scale in percent** | **Letter Grade** |
| Excellent | ≥ 85 | A |
| Very Good | 75 ≤ X < 85 | B+ |
| Good | 60 ≤ X < 75 | B |
| Satisfactory | 50 ≤ X < 60 | C+ |
| Fail | < 50 | F |

# **REQUIRED RESOURCES**

## Human Resource

Potentially, there are staff members from the School of Social Work, School of Psychology and School of Software engineering who shall offer courses independently or collaboratively. Given that the program is new and contains more hybrid courses from social work and psychology; and more stand-alone courses from software engineering, recruitment and employment of expatriate staff will be mandatory until home grown staff will develop the necessary specialization to teach in the program. The following table summarizes the number of required academic staff in the program.

**Table 4: Number of required staff to teach in the program**

|  |  |  |  |
| --- | --- | --- | --- |
| **Courses** | **Expatriate staff** | **Local/national staff** | |
| **Prerequisite Courses** | **Sole-teaching** | **Team Teaching** |
| Python Programming Language & Problem-Solving | - | 1 | - |
| Introduction to Web Development (HTML, CSS, JavaScript) | - | 1 | - |
| **Core Courses** | | | |
| Digital Social Work and Mental Health Foundations | 1 | - | 1 |
| Human-Tech Interaction and User-Centered Design | 1 | - | 1 |
| Intermediate Python for Psychosocial Applications | - | 1 | - |
| Databases and Data Security for Psychosocial service Applications | - | 1 | - |
| Psychosocial Aspects of Technology & Digital Ethics | 1 | - | 1 |
| Agile Development and Project Management for Social Impact | - | 1 | - |
| Mobile App Development (React Native or Flutter) | - | 1 | - |
| Advanced Web & Mobile Frameworks (React, Django, or Node.js) | - | 1 | - |
| APIs and Integration for Digital Psychosocial & Health Solutions | 1 | - | 1 |
| Community-Centered Design Studio | 1 | - | 1 |
| AI and Machine Learning for Psychosocial Interventions | - | 1 | - |
| Low-Code/No-Code Tools for Rapid Prototyping | - | 1 | - |
| Cloud Computing & Scalable Deployment for Digital psychosocial services | - | 1 | - |
| Testing, Debugging, and Software Quality Assurance | - | 1 | - |
| Cyber-security and Policy Compliance in Psychosocial Services | - | 1 | - |
| **MSW-PSE Capstone Project (Design, Development, Deployment)** | - | 5 | - |

Currently, there are staff members from the School of Social Work, School of Psychology and School of Software Engineering who have the expertise to teach the above-mentioned courses independently or in collaboration among themselves or with expatriate staff. The following table provides the list of available staff.

**Table: List of available staff, their location and academic rank**

|  |  |  |
| --- | --- | --- |
| Name | Location | Academic rank |
| Abebe Assefa | School of Social Work | Assistant Professor |
| Abreham Tarekegn | School of Psychology | PhD Candidate |
| Ashenafi Hagos | School of Social Work | Associate Professor |
| Beakal Gizachew | School of Information Technology Engineering | Assistant Professor |
| Daniel Tefera | School of Psychology | Associate Professor |
| Fantahun Bogale | School of Information Technology Engineering | Assistant Professor |
| Mengistu Legesse | School of Social Work | Assistant Professor |
| Mesele Mengsteab | School of Social Work | Assistant Professor |
| Wassie Kebede | School of Social Work | Professor |

## Facilities

The program will be equipped with administrative office, classroom and laboratory facilities.

* The program will be equipped with an administrative office as per the specification in the project proposal (**See Annex B for details**).
* Classrooms will be equipped with input as per the specifications in the project proposal **(See annex C for details**).
* The Technical Software Engineering Laboratory will be equipped with the necessary inputs as per the specification in the project proposal (**See annex D for details**).
* The Psychosocial Software Engineering Laboratory will be equipped with the necessary inputs as per the specification in the project proposal **(See annex E for details).**

## Financial Resources

The program is funded by outside sources. Students’ tuition fees will be fully covered by the program through external funding. In the future, students might be sponsored by specific organizations or join the program as self-sponsored students.

# **QUALITY ASSURANCE**

The School of Social Work and School of Information Technology Engineering implement quality assurance and internal audit to foster a transparent and accountable environment for the teaching and learning process. Quality assurance practices include:

1. Careful consideration of student entry requirements during recruitment to uphold quality and training standards.
2. Comprehensive inspection and improvement of teaching methods.
3. Standardization of course offerings through general course outlines, exam content, and external audits.
4. Ongoing assessment and periodic review of the academic program.
5. Recruitment of qualified and committed academic staff based on university policies and standards.
6. Ensuring sufficient teaching and learning facilities are available and maintained.
7. Promoting student engagement in academic, research, and co-curricular activities.
8. Effective planning, monitoring, and evaluation of departmental and academic operations.
9. Inclusion of graduate feedback to enhance and adjust program effectiveness.
10. Collection of employer and alumni feedback through tracer studies and external audit reports.
11. Review and assurance of exam, assignment, and project standards by the SSW Exam Committee.
12. Oral defenses of term papers, seminar papers, and theses defense conducted before a panel of three instructors.
13. Semester-end performance evaluation of all academic staff, covering teaching, research, service, and community involvement.
14. Ensuring transparent assessment practices and fair grading through pre-and post-exam department council meetings.
15. Collaborating with relevant professional associations to evaluate graduate performance in real-world settings.

# **COURSES**

## Course Listing and Term Schedule

|  |  |  |
| --- | --- | --- |
| **Prerequisite Courses** | **Duration**  **Sept. 15 to December. 15** | |
| In this preparatory phase students will be introduced to two programing languages, namely, Python and Java. This is important since the students will be coming from social work and psychological backgrounds and may lack basic knowledge in coding. Accordingly, the students will be trained in Python and Java programing languages for three months and will receive a **Pass and Fail** grades. Students with failing grades will be rejected from the program. Students should score a **minimum of 75%** of the assessment result to pass a prerequisite course. | | |
| **Year and ECTS** | **Duration** | |
| **Prerequisite Courses** | | |
| **Year One (66 ECTS)** | **Duration** | |
| **YEAR 1** |  | |
| **Term 1 (3 months) – 12 ECTS** | **Sept.1 to Nov 30** | |
| **Credit Hours** | **ECTS** |
| Prerequisite 1: Python Programming Language & Problem-Solving | **--** | **--** |
| Prerequisite 1: Introduction to Web Development (HTML, CSS, JavaScript) | **--** | **--** |
| **Core Courses** | | |
| **Term 2 (3 months) – 18 ECTS** | **Dec.15 to Feb 28** | |
| **Credit Hours** | **ECTS** |
| Digital Social Work and Mental Health Foundations | **3.75** | **6** |
| Human-Computer Interaction and User-Centered Design | **3.75** | **6** |
| Intermediate Python for Psychosocial Applications | **3.75** | **6** |
| **Term 3 (3 months) – 18 ECTS** | **Mar.1 to May 31** | |
| **Credit Hours** | **ECTS** |
| Databases and Data Security for Psychosocial Service Applications | **3.75** | **6** |
| Psychosocial Aspects of Technology & Digital Ethics | **3.75** | **6** |
| Agile Development and Project Management for Social Impact | **3.75** | **6** |
| **Term 4 (3 months) – 18 ECTS** | **June.1 to August 31** | |
| **Credit Hours** | **ECTS** |
| Mobile App Development (React Native or Flutter) | **3.75** | **6** |
| Advanced Web & Mobile Frameworks (React, Django, or Node.js) | **3.75** | **6** |
| APIs and Integration for Digital Psychosocial & Health Solutions | **3.75** | **6** |
| **Year 1 Total (54 ECTS)** | **Duration** | |
| **Term 5 (3 months) – 12 ECTS** | **Sept.1 to Nov 30** | |
| **Credit Hours** | **ECTS** |
| Community-Centered Design Studio | **3.75** | **6** |
| AI and Machine Learning for Psychosocial Interventions | **3.75** | **6** |
| Low-Code/No-Code Tools for Rapid Prototyping | **3.75** | **6** |
| **Term 6 (3 months) – 18 ECTS** | **Dec.1 to Feb 28** | |
| **Credit Hours** | **ECTS** |
| Cloud Computing & Scalable Deployment for Digital psychosocial services | **3.75** | **6** |
| Testing, Debugging, and Software Quality Assurance | **3.75** | **6** |
| Cybersecurity and Policy Compliance in Psychosocial Services | **3.75** | **6** |
| **Term 7 and 8 (6 months) – 30 ECTS** | **Mar.1 to August 31** | |
| **Credit Hours** | **ECTS** |
| MSW-PSE Capstone Project (Design, Development, Deployment) – 30 ECTS | **18.75** | **30** |
| * Term 7: Project planning, design, proposal, and initial development |
| * Term 8: Full development, deployment, testing, and defense/demonstration |
| **Program Total** | **775** | **132** |

# **EXIT STRATEGY**

**Project Failure:** Failure to successfully finish the project requirements set by project managing committee at the time of the teaching learning process will result in total dismissal of the student.

# **Annex A: Course Syllabus**

**A1: Prerequisite Course Work**

**Course: Python Programming Language & Problem-Solving**

**Course Name:** Python Programming Language & Problem-Solving

**Course Code:** MSW-PSE-PRE-101

**Credit Hrs/ECTS:** 6 European Credit Transfer and Accumulation System (ECTS)

**Year and Semester:** Year 1, Term 1 (First 3 months)

**Prerequisite course:** None

**Instructor:**

* Name: – To be assigned
* Contact Information: – To be provided
* Office and Office Hours: – To be provided

**Course Description**

This course introduces foundational programming skills using Python, designed for students from social work and psychology backgrounds with no prior coding experience. Emphasis is placed on solving real-world problems in digital mental health and social services contexts. Students will progress from basic concepts to small application development relevant to psychosocial service delivery.

**Integrity Statement**

All students must complete assignments individually unless group work is explicitly allowed. Plagiarism (copying of code or solutions) or cheating will result in disciplinary actions, including possible course failure.

**Learning Outcomes**

By the end of the course, students will be able to:

* Write Python scripts to solve real-world problems.
* Demonstrate understanding of programming concepts (variables, data types, control flow).
* Read and write files, handle errors, and use functions and modules.
* Use basic libraries such as pandas (Python Data Analysis Library) for data manipulation.
* Design simple psychosocial service solutions in Python.

**Weekly Course Content**

**Course Duration:** 12 weeks (3 months)

|  |  |
| --- | --- |
| **Week** | **Topics** |
| **1** | Introduction to Programming and Python Setup (Integrated Development Environment [IDE], syntax, basic input and output) |
| **2** | Variables, Data Types (strings, numbers, lists, tuples, dictionaries) |
| **3** | Control Structures (if-else statements, loops) |
| **4** | Functions and Modular Programming |
| **5** | Lists, Dictionaries, and Tuples – Handling real-world data |
| **6** | File Handling (reading/writing files, including Comma-Separated Values [CSV] format) |
| **7** | Error Handling and Debugging |
| **8** | Introduction to Libraries: pandas (Python Data Analysis Library) for data manipulation, matplotlib (Python Plotting Library) for visualization |
| **9** | Algorithmic Thinking for Psychosocial Problem-Solving |
| **10** | Mini-Project Design: Digital Case Management or Crisis Tracking Tool |
| **11** | Project Development: Implementation of Mini-Project |
| **12** | Project Presentation and Review; Course Wrap-Up |

**Teaching Methods**

* Lectures with live coding demonstrations
* Hands-on lab sessions and programming exercises
* Pair programming and group problem-solving sessions
* Weekly coding challenges
* Guided mini-project development

**Assessments**

|  |  |  |
| --- | --- | --- |
| **Component** | **Weight (%)** | **Deliverables** |
| Weekly Coding Assignments | 30% | Exercises covering key topics |
| Quizzes (Weeks 4 & 8) | 10% | Concept checks and problem-solving tasks |
| Midterm Mini-Project | 20% | Simple Psychosocial Case Tracker |
| Final Project | 30% | Social Work Digital Tool (file handling, basic data analysis) |
| Participation & Labs | 10% | Attendance, engagement, and collaboration |

**Course Policy**

* Attendance is required for lectures and lab sessions.
* Deadlines for assignments are strictly enforced; extensions require documented justification.
* Active participation in coding exercises is expected.

**Textbooks**

* Python Crash Course by Eric Matthes
* Automate the Boring Stuff with Python by Al Sweigart

**References**

* Think Python by Allen Downey
* Official Python documentation (<https://docs.python.org/3/>)

**Datasets**

* Sample case records for social work practice in Comma-Separated Values (CSV) format
* Example public health and mental health data sets for practice

**Tools**

* Python 3.x (recommended: Anaconda distribution)
* Jupyter Notebook (interactive programming environment)
* Visual Studio Code or PyCharm (code editors)
* GitHub (version control system)

**Assessment Rubrics**

* Code Quality**:** Clarity, readability, and comments (30%)
* Problem-Solving Approach**:** Algorithmic logic and creativity (30%)
* Functionality**:** Meets project requirements and runs correctly (30%)
* Presentation & Documentation**:** Professional presentation of final project (10%)

**Career Alignment**

This course equips students with the essential programming skills to build digital tools for psychosocial service delivery, AI-driven support systems, and scalable health applications. It forms the foundation for future courses on advanced web/mobile app development and psychosocial software engineering.

**Course: Introduction to Web Development**

**Course Name:** Introduction to Web Development (HyperText Markup Language [HTML], Cascading Style Sheets [CSS], JavaScript)

**Course Code:** MSW-PSE-PRE-102

**Credit Hrs/ECTS:** 6 European Credit Transfer and Accumulation System (ECTS)

**Year and Semester:** Year 1, Term 1 (First 3 months)

**Prerequisite course:** None

**Instructor:**

* Name: – To be assigned
* Contact Information: – To be provided
* Office and Office Hours: – To be provided

**Course Description**

This course introduces web development fundamentals using HyperText Markup Language (HTML), Cascading Style Sheets (CSS), and JavaScript, with a focus on creating digital psychosocial services. The course covers website structure, styling, interactivity, and basic responsive design. Students will learn to build simple, functional web pages and prepare for advanced web and mobile development in later courses.

**Integrity Statement**

All assignments must be the students’ own work unless explicitly marked as group projects. Plagiarism or code copying will result in disciplinary action.

**Learning Outcomes**

By the end of the course, students will be able to:

* Design web page structures using HyperText Markup Language (HTML).
* Style web pages with Cascading Style Sheets (CSS) for layout and aesthetics.
* Implement interactivity using JavaScript for client-side behavior.
* Develop responsive and accessible web designs for various devices.
* Create a basic digital psychosocial service website.

**Weekly Course Content**

**Course Duration:** 12 weeks (3 months)

|  |  |
| --- | --- |
| **Week** | **Topics** |
| **1** | Introduction to Web Development; Setting Up Development Environment |
| **2** | HTML Fundamentals: Structure, Tags, Elements |
| **3** | Advanced HTML: Forms, Tables, Semantic Elements |
| **4** | Introduction to CSS: Styling, Selectors, Properties |
| **5** | Advanced CSS: Box Model, Layouts, Flexbox, Grid |
| **6** | Responsive Design Techniques (Mobile-First, Media Queries) |
| **7** | Introduction to JavaScript: Variables, Data Types, Functions |
| **8** | JavaScript Control Structures: Loops, Conditionals |
| **9** | Document Object Model (DOM) Manipulation with JavaScript |
| **10** | Event Handling and Simple Interactions |
| **11** | Mini-Project Design: Simple Web App for Psychosocial Support |
| **12** | Project Implementation, Testing, and Presentation |

**Teaching Methods**

* Interactive lectures with live coding demonstrations
* Hands-on web development labs
* Weekly coding challenges and assignments
* Group collaboration for the mini-project

**Assessments**

|  |  |  |
| --- | --- | --- |
| **Component** | **Weight (%)** | **Deliverables** |
| Weekly Assignments | 30% | HTML/CSS/JavaScript coding exercises |
| Quizzes (Weeks 4 & 8) | 10% | Concept checks |
| Midterm Mini-Project | 20% | Responsive Web Page with Form Inputs |
| Final Project | 30% | Digital Psychosocial Service Website (basic interactive web application) |
| Participation & Labs | 10% | Engagement, attendance, coding practice |

**Course Policy**

* Active participation and attendance required.
* Deadlines are strict; late submissions require documented justification.
* Collaboration is allowed for brainstorming, but coding work must be individual.

**Textbooks**

* HTML and CSS: Design and Build Websites by Jon Duckett
* JavaScript and JQuery by Jon Duckett

**References**

* Mozilla Developer Network (MDN) Web Docs (<https://developer.mozilla.org>)
* FreeCodeCamp and W3Schools resources

**Datasets**

* Sample forms for case registration, user profiles, etc.
* Example psychosocial content (text, images) for practice web apps

**Tools**

* Visual Studio Code (recommended editor)
* Live Server Extension (for real-time preview)
* GitHub (for version control)

**Assessment Rubrics**

* Code Quality: Clean, organized, well-commented code (30%)
* Design and Accessibility: Layout, responsiveness, user-friendliness (30%)
* Functionality: Meets project requirements (30%)
* Presentation and Documentation: Clear explanations and design rationale (10%)

**Career Alignment**

This course prepares students to build professional, accessible web applications that form the backbone of digital psychosocial services. It lays the groundwork for more advanced courses in full-stack development and mobile app creation.

**A2: Course Work: Foundations**

**Course: Digital Social Work and Mental Health Foundations**

**Course Name:** Digital Social Work and Mental Health Foundations

**Course Code:** MSW-PSE-101

**Credit Hrs/ECTS:** 6 European Credit Transfer and Accumulation System (ECTS)

**Year and Semester:** Year 1, Term 2

**Prerequisite course:** Prerequisite courses on Python Programming and Web Development

**Instructor:**

* Name of Lead Instructor: – To be assigned
* Name of Assistant Instructor: – To be assigned
* Contact Information: – To be provided
* Office and Office Hours: – To be provided

**Course Description**

This course introduces students to the concepts, models, and frameworks of digital social work and mental health. It explores how technology-based interventions—including artificial intelligence (AI)-driven platforms, mobile applications, and data analytics—can enhance mental health and social care services. Ethical, cultural, and clinical considerations for digital psychosocial interventions are emphasized.

**Integrity Statement**

Students are expected to uphold the highest standards of academic integrity. Any form of plagiarism or misrepresentation in assignments or projects will result in disciplinary actions as per university policy.

**Learning Outcomes**

By the end of this course, students will be able to:

* Explain the principles and frameworks of digital mental health and digital social work
* Analyze key digital tools and technologies used in psychosocial service delivery.
* Identify ethical, cultural, and privacy considerations in digital mental health interventions.
* Propose technology-based solutions for mental health and social work challenges.
* Develop simple conceptual models for digital interventions.

**Weekly Course Content**

**Course Duration:** 12 weeks (3 months)

|  |  |
| --- | --- |
| **Week** | **Topics** |
| **1** | Introduction to Digital Mental Social Work and Health |
| **2** | Historical and Current Perspectives on Technology in Psychosocial Care |
| **3** | Key Technologies: Mobile Applications, Online Counseling Platforms |
| **4** | Understanding AI (Artificial Intelligence) and Data Analytics in Social Work and Mental Health |
| **5** | Cultural and Ethical Considerations in Digital Interventions |
| **6** | User Privacy, Data Protection, and Consent in Digital Psychosocial Services |
| **7** | Case Studies: Successful Digital Social Work and Mental Health Solutions |
| **8** | Needs Assessment and Solution Design in Psychosocial Care |
| **9** | Community-Centered Approaches and Equity in Digital Services |
| **10** | Developing Conceptual Models for a Digital Intervention |
| **11** | Workshop: Designing a Digital Social Work and Mental Health Solution |
| **12** | Project Presentation and Peer Review |

**Teaching Methods**

* Lectures with case studies
* Group discussions and debates
* Workshops for conceptual model development
* Student-led presentations of proposed solutions

**Assessments**

|  |  |  |
| --- | --- | --- |
| **Component** | **Weight (%)** | **Deliverables** |
| Case Study Analysis | 20% | Written analysis of real-world digital solutions |
| Weekly Reflections | 10% | Short essays on ethical and cultural topics |
| Midterm Quiz | 10% | Multiple-choice and short-answer questions |
| Group Project Proposal | 30% | Conceptual design for a digital psychosocial service |
| Final Presentation | 20% | Peer-reviewed presentation of the project |
| Participation | 10% | Class discussion, workshop involvement |

**Course Policy**

* Active participation and respect for diverse perspectives are required.
* Deadlines are strict unless valid reasons are provided.
* Collaboration is encouraged, but written submissions must be individual unless stated.

**Textbooks**

* Digital Mental Health: A Clinician's Guide by David D. Luxton
* Technology in Social Work Practice by Anne Weiss and Erica Fischer

**References**

* World Health Organization (WHO) guidelines on digital mental health
* Articles and reports on digital health equity and privacy

**Datasets**

* Sample data on mental health service usage
* Open-source digital health repositories

**Tools**

* Case study analysis tools
* Conceptual modeling software (e.g., draw.io)
* Presentation software (e.g., PowerPoint, Google Slides)

**Assessment Rubrics**

* Clarity and Depth of Analysis: (30%)
* Relevance and Innovation of Proposed Solutions: (30%)
* Ethical and Cultural Considerations: (20%)
* Presentation Skills and Documentation: (20%)

**Career Alignment**

This course grounds students in the theory and practice of digital mental health and social work, preparing them for roles in designing, managing, and evaluating technology-driven psychosocial interventions.

**Course: Human-Tech Interaction (HTI) and User-Centered Design**

**Course Name:** Human-Tech Interaction (HCI) and User-Centered Design

**Course Code:** MSW-PSE-102

**Credit Hrs/ECTS:** 6 European Credit Transfer and Accumulation System (ECTS)

**Year and Semester:** Year 1, Term 2

**Prerequisite course:** Introduction to Web Development (HyperText Markup Language [HTML], Cascading Style Sheets [CSS], JavaScript)

**Instructor:**

* Name of Lead Instructor: – To be assigned
* Name of Assistant Instructor: – To be assigned
* Contact Information: – To be provided
* Office and Office Hours: – To be provided

**Course Description**

This course introduces students to the principles and practices of Human-Computer Interaction (HCI) and User-Centered Design (UCD) with a focus on digital mental health and social work applications. Students will learn how to design technology that is intuitive, accessible, and responsive to user needs, while incorporating psychological, social, and cultural considerations.

**Integrity Statement**

All assignments must be original work, reflecting individual understanding and application of design principles. Plagiarism or unauthorized collaboration will result in disciplinary action.

**Learning Outcomes**

By the end of the course, students will be able to:

* Explain core concepts and principles of Human-Computer Interaction (HCI) and User-Centered Design (UCD).
* Apply design thinking and user research methods to psychosocial digital services.
* Design wireframes and prototypes based on user needs and feedback.
* Incorporate accessibility and inclusivity principles in design.
* Evaluate user experience (UX) through usability testing.

**Weekly Course Content**

**Course Duration:** 12 weeks (3 months)

|  |  |
| --- | --- |
| **Week** | **Topics** |
| **1** | Introduction to HCI and UCD; Importance in Digital Mental Health |
| **2** | Cognitive and Psychological Principles in Interface Design |
| **3** | Conducting User Research and Creating Personas |
| **4** | Design Thinking Methodology: Empathize, Define, Ideate |
| **5** | Low-Fidelity Prototyping: Sketches and Wireframes |
| **6** | Visual Design Principles: Layout, Color Theory, Typography |
| **7** | Accessibility and Inclusivity in Design (Web Content Accessibility Guidelines [WCAG]) |
| **8** | Usability Testing Methods and Metrics |
| **9** | Tools for Prototyping (e.g., Figma, Adobe XD) |
| **10** | Iterative Design Based on User Feedback |
| **11** | Project: Design a Prototype for a Psychosocial Digital Service |
| **12** | Project Testing, Presentation, and Peer Review |

**Teaching Methods**

* Interactive lectures and case studies
* Hands-on workshops for user research and prototyping
* Group projects with peer feedback
* Usability testing with sample user data

**Assessments**

|  |  |  |
| --- | --- | --- |
| **Component** | **Weight (%)** | **Deliverables** |
| User Research Report | 15% | Analysis of user needs and persona creation |
| Design Thinking Assignment | 15% | Ideation and low-fidelity wireframes |
| Usability Test Plan | 10% | Test design and metrics |
| Final Project Prototype | 40% | Interactive prototype for a psychosocial digital service |
| Presentation and Peer Review | 10% | Prototype walkthrough and feedback |
| Participation and Labs | 10% | Engagement in discussions and hands-on labs |

**Course Policy**

* Students must participate in user research activities.
* Deadlines are firm; late submissions need documented reasons.
* Collaboration encouraged, but deliverables must reflect individual contributions.

**Textbooks**

* Don't Make Me Think by Steve Krug
* The Design of Everyday Things by Don Norman

**References**

* Nielsen Norman Group (<https://www.nngroup.com/>)
* Web Content Accessibility Guidelines (WCAG) documentation
* Human Factors International (HFI) resources

**Datasets**

* Sample user personas and survey data
* Templates for wireframes and prototypes

**Tools**

* Figma or Adobe XD (for design and prototyping)
* Google Forms or Typeform (for user research surveys)

**Assessment Rubrics**

* User Research Quality: Depth and relevance of insights (20%)
* Design Innovation and Usability: Creativity, user-friendliness (30%)
* Accessibility and Inclusivity: Compliance with accessibility guidelines (20%)
* Presentation and Documentation: Clarity and professionalism (20%)
* Participation: Engagement and collaboration (10%)

**Career Alignment**

This course equips students with essential HCI and UCD skills for creating user-friendly and effective digital solutions in psychosocial and mental health services.

**Course: Intermediate Python for Psychosocial Applications**

**Course Name:** Intermediate Python for Psychosocial Applications

**Course Code:** MSW-PSE-103

**Credit Hrs/ECTS:** 6 European Credit Transfer and Accumulation System (ECTS)

**Year and Semester:** Year 1, Term 3

**Prerequisite course:** Python Programming Language & Problem-Solving

**Instructor:**

* Name: – To be assigned
* Contact Information: – To be provided
* Office and Office Hours: – To be provided

**Course Description**

This course builds upon the foundational knowledge of Python programming to introduce advanced concepts and tools tailored for psychosocial applications. Students will deepen their understanding of data handling, object-oriented programming (OOP), application programming interfaces (APIs), and Python-based libraries commonly used in psychosocial and mental health technology solutions.

**Integrity Statement**

All code submissions must be original and individually authored. Plagiarism, code copying, or unauthorized collaboration will result in academic penalties per university regulations.

**Learning Outcomes**

By the end of this course, students will be able to:

* Utilize intermediate Python concepts such as object-oriented programming (OOP), exception handling, and modules.
* Employ Python libraries (e.g., Pandas, NumPy) for data processing in psychosocial applications.
* Design and build scripts and basic applications for data collection and analysis in mental health contexts.
* Develop and test simple APIs (Application Programming Interfaces) for digital psychosocial services.
* Apply Python tools for visualization and reporting of psychosocial data.

**Weekly Course Content**

**Course Duration:** 12 weeks (3 months)

|  |  |
| --- | --- |
| **Week** | **Topics** |
| **1** | Review of Python Basics and Introduction to Intermediate Concepts |
| **2** | Object-Oriented Programming (OOP) in Python |
| **3** | Modules and Packages for Reusable Code |
| **4** | File Handling and Data Formats (Comma-Separated Values [CSV], JavaScript Object Notation [JSON]) |
| **5** | Introduction to Data Processing Libraries: Pandas and NumPy |
| **6** | Data Cleaning and Preprocessing for Psychosocial Datasets |
| **7** | Exception Handling and Debugging Techniques |
| **8** | Building Simple APIs with Flask (Python-based web framework) |
| **9** | Data Visualization with Matplotlib and Seaborn |
| **10** | Developing a Data-Driven Mini Project (e.g., Mental Health Survey Analysis) |
| **11** | Testing and Documentation of Python Applications |
| **12** | Final Project Presentation and Code Review |

**Teaching Methods**

* Lectures with code demonstrations
* Hands-on coding labs and exercises
* Mini-project development and peer reviews
* Group discussions on case studies

**Assessments**

|  |  |  |
| --- | --- | --- |
| **Component** | **Weight (%)** | **Deliverables** |
| Weekly Coding Exercises | 20% | Short assignments to reinforce concepts |
| Midterm Project | 20% | Data processing script or small app |
| API Development Task | 15% | Flask-based mini-API |
| Final Mini-Project | 30% | Data-driven psychosocial application |
| Participation and Labs | 10% | Engagement in discussions and coding labs |
| Code Review | 5% | Peer evaluation of code quality |

**Course Policy**

* participation in labs and discussions is mandatory.
* All coding assignments must be submitted through the designated version control platform (e.g., GitHub).
* Collaboration is encouraged for brainstorming, but all code must be individually written.

**Textbooks**

* Automate the Boring Stuff with Python by Al Sweigart
* Python for Data Analysis by Wes McKinney

**References**

* Python official documentation (<https://docs.python.org/>)
* Flask documentation (<https://flask.palletsprojects.com/>)
* Online tutorials on data visualization with Matplotlib and Seaborn

**Datasets**

* Sample mental health surveys and datasets (in CSV and JSON formats)
* Public datasets from World Health Organization (WHO) or Open Data repositories

**Tools**

* Python 3.x and Jupyter Notebook
* Pandas, NumPy, Flask, Matplotlib, Seaborn libraries
* GitHub for code version control

**Assessment Rubrics**

* Code Quality and Organization: (30%)
* Functionality and Use of Libraries: (25%)
* Creativity and Innovation in Application: (20%)
* Testing and Debugging: (15%)
* Presentation and Documentation: (10%)

**Career Alignment**

This course advances students’ Python programming skills, enabling them to create data-driven digital applications and services in psychosocial and mental health fields, preparing them for roles in technical design and development teams.

**Course: Databases and Data Security for Psychosocial Service Applications**

**Course Name:** Databases and Data Security for Psychosocial Service Applications

**Course Code:** MSW-PSE-104

**Credit Hrs/ECTS:** 6 European Credit Transfer and Accumulation System (ECTS)

**Year and Semester:** Year 1, Term 3

**Prerequisite course:** Intermediate Python for Psychosocial Applications

**Instructor:**

* Name: – To be assigned
* Contact Information: – To be provided
* Office and Office Hours: – To be provided

**Course Description**

This course introduces students to the design, implementation, and management of databases, with a strong focus on privacy and security considerations for psychosocial service data. Students will learn relational database systems, Structured Query Language (SQL), data modeling, and essential data security principles. Emphasis will be placed on handling sensitive social work and mental health information in compliance with privacy laws and ethical standards.

**Integrity Statement**

All submitted database projects and scripts must be original work. Plagiarism, unauthorized copying, or the use of uncredited sources will result in academic penalties according to university policies.

**Learning Outcomes**

By the end of this course, students will be able to:

* Design normalized databases for psychosocial and health data.
* Write SQL queries to create, read, update, and delete data.
* Implement security measures to protect sensitive data, including encryption and user access control.
* Apply relevant regulations and compliance frameworks (e.g., General Data Protection Regulation [GDPR], Health Insurance
* Portability and Accountability Act [HIPAA]) to data handling.
* Connect Python applications to relational databases and perform secure data operations.

**Weekly Course Content**

**Course Duration:** 12 weeks (3 months)

|  |  |
| --- | --- |
| **Week** | **Topics** |
| **1** | Introduction to Databases and Data Security Principles |
| **2** | Relational Database Concepts and Data Modeling |
| **3** | SQL Basics: Creating Tables, Inserting and Retrieving Data |
| **4** | Advanced SQL: Joins, Subqueries, Indexes |
| **5** | Normalization and Optimizing Database Design |
| **6** | Data Integrity and Constraints |
| **7** | Introduction to Data Security: Encryption, Hashing |
| **8** | User Authentication and Role-Based Access Control |
| **9** | Compliance Frameworks: General Data Protection Regulation (GDPR), Health Insurance Portability and Accountability Act (HIPAA) |
| **10** | Connecting Python Applications to Databases with SQLAlchemy |
| **11** | Case Study: Secure Database Design for a Psychosocial Service App |
| **12** | Final Project Presentation: Secure Database Solution |

**Teaching Methods**

* Lectures and live coding demonstrations
* Practical database design and implementation labs
* Case study analysis (real-world scenarios)
* Group discussions and peer review

**Assessments**

|  |  |  |
| --- | --- | --- |
| **Component** | **Weight (%)** | **Deliverables** |
| Weekly SQL Exercises | 15% | Practical queries and design tasks |
| Midterm Project | 25% | Design and implement a sample psychosocial database |
| Security Implementation | 20% | Encryption and access control demonstration |
| Final Project | 30% | Secure database solution for a digital psychosocial service |
| Participation and Labs | 10% | Engagement and contributions in practical labs |

**Course Policy**

* Active lab participation is essential for mastering practical database and security skills.
* Collaboration for brainstorming is encouraged, but individual work must be submitted.
* Code and documentation must be version-controlled (e.g., GitHub).

**Textbooks**

* Database System Concepts by Silberschatz, Korth, and Sudarshan
* SQL for Data Scientists by Renee M. P. Teate

**References**

* MySQL and PostgreSQL official documentation
* SQLAlchemy documentation (<https://www.sqlalchemy.org/>)
* Relevant privacy and data protection regulations (GDPR, HIPAA)

**Datasets**

* Sample psychosocial service datasets (anonymized)
* Public health datasets for practice

**Tools**

* MySQL or PostgreSQL relational database systems
* Python (with SQLAlchemy) for database interaction
* Encryption libraries (e.g., PyCrypto)

**Assessment Rubrics**

* Database Design Quality: (25%)
* SQL Query Accuracy and Efficiency: (25%)
* Security Implementation (Encryption, Access Control): (20%)
* Integration with Python Applications: (15%)
* Documentation and Presentation: (15%)

**Career Alignment**

This course prepares students to design, secure, and manage databases for psychosocial and health applications, providing foundational skills for digital health software engineering and data privacy roles.

**Course: Psychosocial Aspects of Technology and Digital Ethics**

**Course Name:** Psychosocial Aspects of Technology and Digital Ethics

**Course Code:** MSW-PSE-105

**Credit Hrs/ECTS:** 6 European Credit Transfer and Accumulation System (ECTS)

**Year and Semester:** Year 1, Term 3

**Prerequisite course:** None (recommended: Digital Mental Health and Social Work Foundations)

**Instructor:**

* Name of Lead Instructor: – To be assigned
* Name of Assistant Instructor: – To be assigned
* Contact Information: – To be provided
* Office and Office Hours: – To be provided

**Course Description**

This course explores the interplay between technology, human behavior, and society, with an emphasis on ethical frameworks. It equips students with the ability to critically analyze the psychosocial impacts of digital solutions, including mental health technologies, social media, and artificial intelligence. Ethical considerations such as data privacy, consent, bias, digital equity, and regulatory compliance are examined through a psychosocial lens.

**Integrity Statement**

All essays, case studies, and reflections must be original work. Students must properly attribute any sources used and uphold the university's code of academic integrity.

**Learning Outcomes**

By the end of this course, students will be able to:

* Analyze the psychosocial effects of emerging technologies on individuals and communities.
* Identify ethical challenges in designing and deploying digital psychosocial solutions.
* Apply ethical frameworks and regulatory guidelines (e.g., General Data Protection Regulation [GDPR], Health Insurance
* Portability and Accountability Act [HIPAA], Belmont Report) to digital social work.
* Propose solutions that prioritize digital equity, inclusivity, and cultural sensitivity.
* Critically evaluate real-world case studies involving digital ethics.

**Weekly Course Content**

**Course Duration:** 12 weeks (3 months)

|  |  |
| --- | --- |
| **Week** | **Topics** |
| **1** | Introduction to Technology's Role in Psychosocial Services |
| **2** | Human-Technology Interaction: Behavioral and Social Dimensions |
| **3** | Digital Divide and Access Equity Issues |
| **4** | Cultural Sensitivity and Inclusion in Digital Services |
| **5** | Data Privacy and Confidentiality in Digital Social Work |
| **6** | Ethical Frameworks and Regulations (General Data Protection Regulation [GDPR], Health Insurance Portability and Accountability Act [HIPAA], Belmont Report) |
| **7** | Bias and Fairness in Algorithms and AI (Artificial Intelligence) |
| **8** | Case Study: Ethical Challenges in a Digital Mental Health App |
| **9** | Ethics of Data Collection and User Consent |
| **10** | Designing for Inclusivity and Accessibility |
| **11** | Social and Psychological Impacts of Social Media and Digital Platforms |
| **12** | Final Presentation: Ethical Review of a Student-Selected Case |

**Teaching Methods**

* Lectures with real-world case examples
* Group discussions and debates
* Reflection essays and ethical reviews
* Guest speakers from digital health and ethics sectors

**Assessments**

|  |  |  |
| --- | --- | --- |
| **Component** | **Weight (%)** | **Deliverables** |
| Weekly Reflection Essays | 15% | Short essays reflecting on weekly topics |
| Midterm Case Study | 20% | Analysis of an ethical issue in digital services |
| Group Debate | 15% | Participation in a structured debate on ethics |
| Final Project | 30% | Ethical analysis of a selected real-world case |
| Participation | 10% | Contributions to discussions and group work |
| Peer Review | 10% | Constructive feedback on classmates’ work |

**Course Policy**

* Respectful participation is expected, especially in discussions on sensitive psychosocial topics.
* All work must demonstrate critical thinking and ethical reasoning.
* Collaboration is encouraged for debates and peer reviews but not for individual essays.

**Textbooks**

* Digital Ethics: Research and Practice by Don Heider and Adrienne L. Massanari
* Ethics for the Information Age by Michael J. Quinn

**References**

* Belmont Report (1979)
* General Data Protection Regulation (GDPR) guidelines
* Health Insurance Portability and Accountability Act (HIPAA) rules
* Selected journal articles on digital ethics and psychosocial impacts

**Datasets**

* Sample case studies and anonymized data sets for analysis

**Tools**

* Ethical analysis frameworks
* Access to digital platforms and privacy tools for case studies

**Assessment Rubrics**

* Critical Thinking and Ethical Reasoning: (30%)
* Depth of Analysis in Case Studies: (25%)
* Clarity and Coherence in Written Work: (20%)
* Active Participation and Constructive Peer Feedback: (15%)
* Presentation Quality and Engagement: (10%)

**Career Alignment**

This course equips students to anticipate and address ethical challenges in psychosocial software design and deployment, preparing them for roles in digital health, mental health technology, and social innovation.

**Course: Agile Development and Project Management for Social Impact**

**Course Name:** Agile Development and Project Management for Social Impact

**Course Code:** MSW-PSE-106

**Credit Hrs/ECTS:** 6 European Credit Transfer and Accumulation System (ECTS)

**Year and Semester:** Year 1, Term 4

**Prerequisite course:** None (recommended: Introduction to Web Development and Digital Mental Health Foundations)

**Instructor:**

* Name: – To be assigned
* Contact Information: – To be provided
* Office and Office Hours: – To be provided

**Course Description**

This course introduces Agile methodologies and project management principles tailored for social impact and psychosocial software projects. It focuses on adaptive planning, iterative development, stakeholder engagement, and delivery of high-quality, user-centered digital solutions. Students will learn practical tools to manage psychosocial software projects effectively, from planning to deployment, while addressing social needs and ethical considerations.

**Integrity Statement**

All project deliverables must be original work. Students must follow the university's academic integrity policy and attribute any external contributions appropriately.

**Learning Outcomes**

By the end of this course, students will be able to:

* Explain the principles of Agile methodologies (e.g., Scrum, Kanban) and how they apply to psychosocial software development.
* Use project management tools (e.g., Jira, Trello) to plan, track, and deliver psychosocial software projects.
* Engage stakeholders effectively, especially in social impact projects involving diverse communities.
* Identify and mitigate risks, including ethical and cultural considerations, in project delivery.
* Deliver functional prototypes and incremental releases through iterative development.

**Weekly Course Content**

**Course Duration:** 12 weeks (3 months)

|  |  |
| --- | --- |
| **Week** | **Topics** |
| **1** | Introduction to Agile Principles and Project Management |
| **2** | Agile Frameworks Overview: Scrum, Kanban, Lean, and XP (Extreme Programming) |
| **3** | Project Planning for Social Impact: Defining Goals, Scope, and Success Criteria |
| **4** | User Stories and Requirements Gathering from Community Stakeholders |
| **5** | Creating Product Backlogs and Sprint Planning |
| **6** | Iterative Development Cycles and Feedback Loops |
| **7** | Collaborative Tools: Using Jira, Trello, and GitHub for Project Tracking |
| **8** | Risk Management and Ethical Considerations in Social Impact Projects |
| **9** | Team Dynamics: Roles (e.g., Scrum Master, Product Owner) and Effective Communication |
| **10** | Monitoring Progress: Daily Stand-ups, Sprint Reviews, and Retrospectives |
| **11** | Project Delivery: MVP (Minimum Viable Product) Deployment and Quality Assurance |
| **12** | Final Project Presentation: Agile Plan for a Psychosocial Digital Solution |

**Teaching Methods**

* Lectures and interactive workshops
* Group project work simulating real-life Agile projects
* Case studies of social impact projects
* Agile simulation exercises (e.g., Scrum games)

**Assessments**

|  |  |  |
| --- | --- | --- |
| **Component** | **Weight (%)** | **Deliverables** |
| Agile Project Plan | 20% | Detailed plan including backlog, sprints, and risk analysis |
| Group Agile Simulation | 15% | Participation in Agile simulation exercises |
| Progress Reports | 15% | Weekly updates and reflections |
| Final Agile Project | 30% | Prototype with documentation and presentation |
| Participation | 10% | Active engagement in group work and discussions |
| Peer Assessment | 10% | Evaluation of teamwork and contributions |

**Course Policy**

* Collaboration is encouraged for group projects; however, individual contributions must be clear.
* Respectful and inclusive communication is mandatory, especially when working with community stakeholders.
* Late submissions of project deliverables may be penalized unless prior arrangements are made.

**Textbooks**

* Agile Project Management with Scrum by Ken Schwaber
* Scrum: The Art of Doing Twice the Work in Half the Time by Jeff Sutherland

**References**

* PMI Agile Practice Guide
* Selected case studies on social impact software projects
* Articles from Harvard Business Review and ProjectManagement.com

**Datasets**

* Sample project plans and case studies for analysis

**Tools**

* Jira or Trello (for project tracking)
* GitHub (for code collaboration)
* Miro or Mural (for visual planning and retrospectives)

**Assessment Rubrics**

* Agile Planning and Documentation: (25%)
* Iterative Development and Prototype Quality: (25%)
* Collaboration and Communication: (20%)
* Risk Analysis and Ethical Considerations: (15%)
* Presentation and Reporting Quality: (15%)

**Career Alignment**

This course equips students with project management skills highly applicable to roles in digital health, social innovation, and psychosocial software engineering. It fosters the ability to deliver impactful, user-centered solutions in complex, real-world environments.

**Course: Mobile App Development (React Native or Flutter)**

**Course Name:** Mobile App Development (React Native or Flutter)

**Course Code:** MSW-PSE-107

**Credit Hrs/ECTS:** 6 European Credit Transfer and Accumulation System (ECTS)

**Year and Semester:** Year 2, Term 1

**Prerequisite course:** Intermediate Python for Psychosocial Applications, Introduction to Web Development

**Instructor:**

* Name: – To be assigned
* Contact Information: – To be provided
* Office and Office Hours: – To be provided

**Course Description**

This course introduces mobile application development using cross-platform frameworks, React Native and Flutter. Students will learn to design, code, and deploy mobile applications focused on psychosocial and social work interventions. Emphasis is placed on creating user-friendly, culturally appropriate, and secure mobile apps for social impact, with a focus on delivering services in resource-limited settings.

**Integrity Statement**

All mobile app code and designs must be the original work of students. Academic integrity must be maintained, and all use of external libraries or resources must be properly cited.

**Learning Outcomes**

By the end of this course, students will be able to:

* Understand the architecture and development lifecycle of cross-platform mobile apps.
* Build user interfaces with responsive design using React Native or Flutter.
* Implement app functionality such as navigation, form input, data storage, and API integration.
* Deploy mobile apps to simulators and real devices.
* Integrate ethical considerations and data security in mobile app design.

**Weekly Course Content**

**Course Duration:** 12 weeks (3 months)

|  |  |
| --- | --- |
| **Week** | **Topics** |
| **1** | Introduction to Cross-Platform Mobile App Development: Overview of React Native and Flutter |
| **2** | Setting Up Development Environment and Tools (Node.js, npm, Android Studio, Xcode) |
| **3** | Dart Language Basics (for Flutter) or JavaScript/TypeScript Basics (for React Native) |
| **4** | Building User Interfaces: Widgets and Components |
| **5** | Navigation and Routing in Mobile Apps |
| **6** | Handling User Input and Forms |
| **7** | State Management: Provider (Flutter) or Redux/Context (React Native) |
| **8** | Accessing Local Storage and Databases (SQLite) |
| **9** | Connecting to Web APIs (Application Programming Interfaces) and Fetching Data |
| **10** | Testing and Debugging Mobile Apps |
| **11** | Deploying to Simulators and Physical Devices |
| **12** | Final Project: Developing a Prototype of a Mobile Psychosocial Service App |

**Teaching Methods**

* Hands-on coding workshops
* Mini-projects and peer reviews
* Interactive lectures with live coding
* Use of simulators/emulators for testing apps
* Group brainstorming for final app design

**Assessments**

|  |  |  |
| --- | --- | --- |
| **Component** | **Weight (%)** | **Deliverables** |
| Weekly Mini-Projects | 25% | Small coding assignments to build app features |
| Midterm Project | 20% | Partial app with functional components |
| Final App Prototype | 30% | Fully functional app prototype with documentation |
| Code Quality & Testing | 15% | Code reviews and debugging reports |
| Participation | 10% | Active engagement in workshops and discussions |

**Course Policy**

* Use only permitted libraries and cite any third-party code used.
* Regular backup of work is mandatory to avoid data loss.
* Attendance at workshops is highly recommended as they build on each other.

**Textbooks**

* React Native in Action by Nader Dabit
* Flutter for Beginners by Alessandro Biessek

**References**

* React Native and Flutter official documentation
* Online tutorials and open-source project examples
* Articles from Medium, Smashing Magazine, and Dev.to

**Datasets**

* Sample APIs (e.g., Firebase, RESTful APIs) for app integration

**Tools**

* React Native CLI or Expo (for React Native)
* Flutter SDK and DartPad (for Flutter)
* Android Studio and Xcode for simulation
* GitHub for code versioning

**Assessment Rubrics**

* Code Quality and Functionality: (30%)
* User Interface and User Experience: (20%)
* Integration of Data Storage and APIs: (20%)
* Project Documentation and Presentation: (15%)
* Participation and Collaboration: (15%)

**Career Alignment**

This course prepares students for roles in mobile app development, especially for creating digital solutions in health, psychosocial, and social work contexts. Skills in React Native and Flutter are in high demand for cross-platform development, enhancing career prospects in tech for social good.

**Course: Advanced Web & Mobile Frameworks (React, Django, or Node.js)**

**Course Name:** Advanced Web & Mobile Frameworks (React, Django, or Node.js)

**Course Code:** MSW-PSE-108

**Credit Hrs/ECTS:** 6 European Credit Transfer and Accumulation System (ECTS)

**Year and Semester:** Year 2, Term 2

**Prerequisite course:** Mobile App Development (React Native or Flutter), Intermediate Python for Psychosocial Applications

**Instructor:**

* Name: – To be assigned
* Contact Information: – To be provided
* Office and Office Hours: – To be provided

**Course Description**

This course explores advanced frameworks for web and mobile application development, focusing on React for frontend, Django for backend, and Node.js for full-stack solutions. Students will learn how to build scalable, responsive, and secure web and mobile apps for psychosocial and mental health service delivery. The course emphasizes best practices in coding, testing, and integrating APIs, ensuring ethical and user-centered solutions.

**Integrity Statement**

All coding assignments must be original and completed individually unless stated otherwise. Collaboration is encouraged in team projects, with clear documentation of contributions.

**\*Learning Outcomes**

By the end of this course, students will be able to:

* Develop complex user interfaces with React, including state management and routing.
* Build robust backend systems using Django (Python-based) or Node.js (JavaScript runtime) with database integration.
* Integrate RESTful (Representational State Transfer) and GraphQL APIs (Application Programming Interfaces).  
  Apply authentication, authorization, and data protection techniques.
* Deploy web and mobile applications to cloud platforms.

**Weekly Course Content**

**Course Duration:** 12 weeks (3 months)

|  |  |
| --- | --- |
| **Week** | **Topics** |
| **1** | Overview of Advanced Frameworks: React, Django, Node.js – When and Why to Use Them |
| **2** | React Deep Dive: Advanced Components, Hooks, Context API |
| **3** | React Routing, State Management (Redux or Context), Form Handling |
| **4** | Django Deep Dive: Models, Views, Templates (MVT Architecture) |
| **5** | Django REST Framework (DRF): Building Secure APIs |
| **6** | Node.js Deep Dive: Express.js, Middleware, RESTful APIs |
| **7** | Database Integration: PostgreSQL with Django, MongoDB or MySQL with Node.js |
| **8** | Authentication and Authorization: OAuth 2.0, JWT (JSON Web Tokens) |
| **9** | Cloud Deployment: Heroku, AWS (Amazon Web Services), or Azure |
| **10** | Testing Strategies: Unit Testing, Integration Testing |
| **11** | Performance Optimization: Caching, Asynchronous Processing |
| **12** | Final Project: Full-stack Web or Mobile Application for Psychosocial Services |

**Teaching Methods**

* Interactive coding labs with real-world examples
* Group project development with feedback
* Problem-solving workshops and live coding demonstrations
* Use of Git and GitHub for collaborative coding
* Guest lectures by industry professionals

**Assessments**

|  |  |  |
| --- | --- | --- |
| **Component** | **Weight (%)** | **Deliverables** |
| Weekly Coding Exercises | 20% | Advanced tasks on React/Django/Node.js |
| Midterm Project | 20% | Backend or frontend module implementation |
| Final Project | 30% | Full-stack application with complete deployment |
| Code Quality & Security | 20% | Best practices in coding and secure authentication |
| Participation | 10% | Active involvement in labs and discussions |

**Course Policy**

* Collaboration is permitted for group projects; individual assignments must be original.
* Use of version control systems (e.g., Git) is mandatory.
* Timely submission of projects and assignments is crucial.

**Textbooks**

* Full-Stack React Projects by Shama Hoque
* Django for Professionals by William S. Vincent
* Node.js Design Patterns by Mario Casciaro

**References**

* Official documentation for React, Django, and Node.js
* Online coding platforms like GitHub, GitLab, and Stack Overflow
* Research papers on scalable web architectures for health and psychosocial services

**Datasets**

* Public health datasets for app integration
* Sample user data for testing (anonymized)

**Tools**

* React development environment (Node.js, npm, React Developer Tools)
* Django framework with PostgreSQL or SQLite
* Node.js with Express.js and MongoDB
* Git, GitHub, and cloud platforms (AWS, Heroku, Azure)

**Assessment Rubrics**

* Code Functionality and Completeness: (30%)
* Security and Data Protection: (20%)
* User Experience and Accessibility: (20%)
* Documentation and Presentation: (15%)
* Participation and Collaboration: (15%)

**Career Alignment**

This course prepares students for full-stack developer roles in health, psychosocial, and mental health service sectors. Skills in React, Django, and Node.js are in high demand, enabling graduates to build and deploy digital solutions with a social impact focus.

**Course: APIs and Integration for Digital Psychosocial & Health Solutions**

**Course Name:** Application Programming Interfaces (APIs) and Integration for Digital Psychosocial & Health Solutions

**Course Code:** MSW-PSE-109

**Credit Hrs/ECTS:** 6 European Credit Transfer and Accumulation System (ECTS)

**Year and Semester:** Year 2, Term 3

**Prerequisite course:** Advanced Web & Mobile Frameworks (React, Django, or Node.js)

**Instructor:**

* Name of Lead Instructor: – To be assigned
* Name of Assistant Instructor: – To be assigned
* Contact Information: – To be provided
* Office and Office Hours: – To be provided

**Course Description**

This course provides students with the knowledge and skills required to design, develop, and integrate Application Programming Interfaces (APIs) for digital psychosocial and health services. Students will explore the creation of RESTful (Representational State Transfer) and GraphQL APIs, third-party service integration (e.g., SMS gateways, health data systems), and interoperability standards (e.g., HL7 Health Level Seven). Emphasis will be placed on secure and scalable integration practices that align with digital ethics and data privacy regulations.

**Integrity Statement**

All assignments must be original. Collaborative work is permitted for group projects with proper attribution. Adherence to ethical programming and data protection standards is mandatory.

**Learning Outcomes**

By the end of this course, students will be able to:

* Design and develop RESTful and GraphQL APIs for psychosocial and health applications.
* Integrate third-party APIs such as payment systems, telehealth platforms, and SMS services.
* Apply interoperability standards (e.g., HL7) to ensure compatibility with health systems.
* Implement secure authentication and authorization for APIs using OAuth 2.0 and JWT (JSON Web Tokens).
* Develop scalable microservice architectures for digital service delivery.

**Weekly Course Content**

**Course Duration:** 12 weeks (3 months)

|  |  |
| --- | --- |
| **Week** | **Topics** |
| **1** | Introduction to APIs: RESTful, GraphQL, and SOAP (Simple Object Access Protocol) |
| **2** | RESTful API Design Principles: CRUD (Create, Read, Update, Delete) Operations |
| **3** | Authentication and Authorization: OAuth 2.0, JWT (JSON Web Tokens), and API Keys |
| **4** | Building APIs with Django REST Framework (DRF) or Express.js |
| **5** | Error Handling, Logging, and Monitoring in APIs |
| **6** | Introduction to HL7 (Health Level Seven) and FHIR (Fast Healthcare Interoperability Resources) |
| **7** | Integration with External Services: SMS Gateways, Payment Platforms, Telehealth APIs |
| **8** | Securing APIs: HTTPS (HyperText Transfer Protocol Secure), Rate Limiting, Data Encryption |
| **9** | GraphQL Basics and When to Use It |
| **10** | Advanced API Features: Webhooks, Streaming APIs |
| **11** | Microservices and API Gateways (e.g., Kong, Apigee) |
| **12** | Final Project: Design and Build an Integrated Digital Health Service API |

**Teaching Methods**

* Hands-on coding workshops on API development
* Integration projects with external platforms
* Group discussions on security and compliance issues
* Guest lectures from industry experts on API design for healthcare

**Assessments**

|  |  |  |
| --- | --- | --- |
| **Component** | **Weight (%)** | **Deliverables** |
| Weekly Coding Tasks | 20% | API development and integration exercises |
| Midterm Project | 20% | Secure API for a psychosocial app module |
| Final Project | 30% | Fully integrated digital health service API |
| Code Quality & Security | 20% | Secure and scalable design with best practices |
| Participation | 10% | Active involvement in labs and discussions |

**Course Policy**

* Mandatory use of Git for version control
* Timely submission of assignments
* Collaboration allowed only for designated group projects

**Textbooks**

* Designing Web APIs: Building APIs That Developers Love by Brenda Jin, Saurabh Sahni, Amir Shevat
* API Design Patterns by JJ Geewax

**References**

* HL7 and FHIR official documentation
* Online platforms: Postman, Swagger, Insomnia
* Health data integration guides

**Datasets**

* Sample psychosocial and health service data (anonymized)
* Open-source health datasets for integration

**Tools**

* Postman or Insomnia for API testing
* Django REST Framework or Express.js for API development
* Git, GitHub for version control
* API gateway tools (Kong, Apigee)

**Assessment Rubrics**

* API Functionality and Scalability: (30%)
* Security and Compliance: (20%)
* Integration Completeness: (20%)
* Documentation and Presentation: (15%)
* Participation and Collaboration: (15%)

**Career Alignment**

This course equips students with in-demand skills for backend and integration roles in digital health, mental health, and psychosocial service sectors, focusing on secure and interoperable solutions.

**Course: Community-Centered Design Studio**

**Course Name:** Community-Centered Design Studio

**Course Code:** MSW-PSE-110

**Credit Hrs/ECTS:** 6 European Credit Transfer and Accumulation System (ECTS)

**Year and Semester:** Year 2, Term 3

**Prerequisite course:** Human-Computer Interaction and User-Centered Design

**Instructor:**

* Name of Lead Instructor: – To be assigned
* Name of Assistant Instructor: – To be assigned
* Contact Information: – To be provided
* Office and Office Hours: – To be provided

**Course Description**

This hands-on studio course immerses students in the principles and practices of community-centered design, with a focus on psychosocial and health-related challenges. Through participatory workshops, field research, and iterative prototyping, students will design and test digital interventions co-created with community stakeholders. Emphasis will be placed on ethical engagement, cultural sensitivity, and sustainable design practices.

**Integrity Statement**

This course demands original design work based on community engagement. Plagiarism, misrepresentation, or unauthorized use of others' work is strictly prohibited.

**Learning Outcomes**

By the end of this course, students will be able to:

Apply community-centered and participatory design methods to digital service creation.

Conduct ethical field research and stakeholder engagement.

Translate community needs into digital prototypes.

Test and iterate designs based on user feedback.

Develop culturally responsive and sustainable digital solutions.

**Weekly Course Content**

**Course Duration:** 12 weeks (3 months)

|  |  |
| --- | --- |
| **Week** | **Topics** |
| **1** | Introduction to Community-Centered Design: Principles and Frameworks |
| **2** | Participatory Research Methods: Interviews, Focus Groups, Surveys |
| **3** | Ethical and Cultural Considerations in Community Engagement |
| **4** | Mapping Stakeholder Ecosystems and Defining Design Challenges |
| **5** | Co-creation Workshops: Tools and Techniques |
| **6** | Developing Low-Fidelity Prototypes and Storyboards |
| **7** | Field Testing Prototypes with Community Feedback |
| **8** | Iterative Design: Refining Prototypes |
| **9** | Digital Tools for Collaborative Design (e.g., Miro, Figma) |
| **10** | Measuring Impact and Success Metrics for Community Solutions |
| **11** | Presentation Skills for Community Stakeholders |
| **12** | Final Design Showcase and Reflection |

**Teaching Methods**

* In-person or virtual co-creation workshops
* Field research and community engagement
* Design sprints and iterative prototyping
* Peer reviews and group critiques

**Assessments**

|  |  |  |
| --- | --- | --- |
| **Component** | **Weight (%)** | **Deliverables** |
| Field Research Report | 20% | Documentation of community engagement findings |
| Prototype Development | 30% | Low- and high-fidelity prototypes |
| User Testing & Iteration | 20% | Results from field testing and refinements |
| Final Design Presentation | 20% | Showcase of project outcomes and reflection |
| Participation | 10% | Active engagement in workshops and critiques |

**Course Policy**

* Mandatory participation in community engagement activities
* Timely submission of design artifacts and documentation
* Respect for cultural and ethical standards in community work

**Textbooks**

* Design Justice: Community-Led Practices to Build the Worlds We Need by Sasha Costanza-Chock
* Participatory Design: Principles and Practices by Douglas Schuler and Aki Namioka

**References**

* Case studies of digital social work and health projects
* Community-centered design toolkits and guides

**Datasets**

* Community-generated data (with consent and anonymization)
* Public health and social work datasets for context

**Tools**

* Design collaboration platforms: Figma, Miro, Adobe XD
* Field data collection tools: Google Forms, KoBoToolbox

**Assessment Rubrics**

* Community Engagement Quality: (30%)
* Design Innovation and Relevance: (25%)
* User Testing and Iteration Rigor: (20%)
* Final Presentation Clarity: (15%)
* Participation and Collaboration: (10%)

**Career Alignment**

This course prepares students for roles in human-centered design, digital social innovation, and community engagement in psychosocial and health fields, ensuring that technology solutions are deeply rooted in real-world needs.

**Course: AI and Machine Learning for Psychosocial Interventions**

**Course Name:** AI and Machine Learning for Psychosocial Interventions

**Course Code:** MSW-PSE-111

**Credit Hrs/ECTS:** 6 European Credit Transfer and Accumulation System (ECTS)

**Year and Semester:** Year 2, Term 4

**Prerequisite course:** Intermediate Python for Psychosocial Applications

**Instructor:**

* Name: – To be assigned
* Contact Information: – To be provided
* Office and Office Hours: – To be provided

**Course Description**

This course introduces students to the fundamentals of artificial intelligence (AI) and machine learning (ML) with a focus on psychosocial and mental health applications. Students will learn how to design, develop, and evaluate AI-driven interventions such as chatbots for mental health, predictive models for social work, and personalized digital interventions. Emphasis will be placed on ethical, cultural, and regulatory considerations.

**Integrity Statement**

Plagiarism, unauthorized collaboration, and misuse of AI tools will not be tolerated. Students are expected to uphold high standards of academic integrity and ethical practice, especially when working with sensitive psychosocial data.

**Learning Outcomes**

By the end of this course, students will be able to:

* Explain the core concepts of AI and machine learning, including supervised and unsupervised learning.
* Apply Python-based machine learning libraries (such as scikit-learn, TensorFlow, PyTorch) to develop simple AI models.
* Design AI-driven tools for psychosocial interventions, such as sentiment analysis and chatbot applications.
* Critically analyze ethical, cultural, and data privacy issues in AI solutions.
* Evaluate model performance and understand bias and fairness considerations.

**Weekly Course Content**

**Course Duration:** 12 weeks (3 months)

|  |  |
| --- | --- |
| **Week** | **Topics** |
| **1** | Introduction to AI and ML: Definitions, History, and Applications |
| **2** | Types of Machine Learning: Supervised, Unsupervised, Reinforcement |
| **3** | Data Preparation: Cleaning, Feature Engineering, and Formatting |
| **4** | Building ML Models: Linear Regression, Decision Trees |
| **5** | Classification Models for Social Work (e.g., Support Vector Machines, k-Nearest Neighbors) |
| **6** | Natural Language Processing (NLP) for Psychosocial Applications |
| **7** | Chatbots and Conversational Agents for Mental Health Support |
| **8** | Model Evaluation: Metrics, Validation, and Testing |
| **9** | Ethics and Bias in AI: Fairness, Transparency, and Accountability |
| **10** | Data Privacy and Compliance in Psychosocial AI Solutions |
| **11** | Capstone Mini-Project: Design and Implement a Simple AI-Driven Tool |
| **12** | Presentations, Peer Feedback, and Course Wrap-Up |

**Teaching Methods**

* Interactive lectures and tutorials
* Hands-on Python coding labs
* Collaborative mini-projects
* Case study discussions on real-world AI interventions

**Assessments**

|  |  |  |
| --- | --- | --- |
| **Component** | **Weight (%)** | **Deliverables** |
| Programming Exercises | 25% | Python-based ML code for various models |
| Mini-Project | 35% | AI-driven psychosocial tool with documentation |
| Ethics Reflection | 15% | Critical analysis of ethical challenges |
| Final Presentation | 15% | Project showcase and peer feedback |
| Participation | 10% | Active engagement in coding labs and discussions |

**Course Policy**

* Regular lab participation and timely submission of assignments
* Adherence to ethical standards in data handling and AI design
* Respectful engagement during group work and peer reviews

**Textbooks**

* Hands-On Machine Learning with Scikit-Learn, Keras, and TensorFlow by Aurélien Géron
* Artificial Intelligence: A Guide for Thinking Humans by Melanie Mitchell

**References**

* Case studies of AI in social work and mental health
* Regulatory frameworks for digital health and AI ethics

**Datasets**

* Open-source psychosocial datasets (e.g., public health records, anonymized social service data)
* Text data for NLP (e.g., anonymized transcripts of counseling sessions)

**Tools**

* Python libraries: scikit-learn, TensorFlow, PyTorch, NLTK (Natural Language Toolkit)
* Jupyter Notebooks for coding exercises

**Assessment Rubrics**

* Technical Accuracy: (30%)
* Creativity and Relevance of Mini-Project: (30%)
* Ethics and Privacy Considerations: (20%)
* Presentation Quality: (10%)
* Participation and Collaboration: (10%)

**Career Alignment**

This course prepares students to apply AI and machine learning in real-world psychosocial and health solutions, bridging gaps in service delivery through innovative technology. It equips them for roles in digital health development, data-driven social work, and ethical AI design.

**Course: Low-Code/No-Code Tools for Rapid Prototyping**

**Course Name:** Low-Code/No-Code Tools for Rapid Prototyping

**Course Code:** MSW-PSE-112

**Credit Hrs/ECTS:** 6 European Credit Transfer and Accumulation System (ECTS)

**Year and Semester:** Year 2, Term 4

**Prerequisite course:** Introduction to Web Development (HTML, CSS, JavaScript)

**Instructor:**

* Name: – To be assigned
* Contact Information: – To be provided
* Office and Office Hours: – To be provided

**Course Description**

This course provides an introduction to rapid digital solution prototyping using low-code and no-code platforms such as Bubble, Adalo, and Microsoft PowerApps. Students will learn how to design and deploy functional prototypes of psychosocial and health applications without extensive coding, bridging the gap between concept and implementation. Emphasis will be placed on rapid iteration, usability, and integration with data and APIs (Application Programming Interfaces).

**Integrity Statement**

Students are expected to design solutions with ethical integrity, ensuring privacy, security, and user consent are respected. Plagiarism and unauthorized use of pre-existing templates without adaptation will not be tolerated.

**Learning Outcomes**

By the end of this course, students will be able to:

* Identify key low-code/no-code platforms and evaluate their strengths and limitations for psychosocial service delivery.
* Design and develop functional prototypes of digital psychosocial solutions.
* Integrate APIs (Application Programming Interfaces) and external data sources into prototypes.
* Apply principles of usability, accessibility, and user-centered design to low-code/no-code applications.
* Rapidly iterate on prototypes based on user feedback.

**Weekly Course Content**

**Course Duration:** 12 weeks (3 months)

|  |  |
| --- | --- |
| **Week** | **Topics** |
| **1** | Introduction to Low-Code/No-Code Concepts and Platforms |
| **2** | Overview of Tools: Bubble, Adalo, PowerApps, Glide |
| **3** | Designing Wireframes and Mockups |
| **4** | Building Pages and User Interfaces (UIs) |
| **5** | Data Integration and Basic Backend Concepts |
| **6** | Adding Logic and Workflows to Applications |
| **7** | Incorporating APIs (Application Programming Interfaces) |
| **8** | User Testing and Feedback Collection |
| **9** | Iterative Design and Improving Usability |
| **10** | Accessibility and Ethical Considerations in Prototyping |
| **11** | Capstone Mini-Project: Develop a Prototype for a Psychosocial Solution |
| **12** | Showcase, Peer Feedback, and Course Wrap-Up |

**Teaching Methods**

* Interactive workshops and tool demonstrations
* Guided hands-on projects and exercises
* Group work and user testing sessions
* Peer feedback and critique

**Assessments**

|  |  |  |
| --- | --- | --- |
| **Component** | **Weight (%)** | **Deliverables** |
| Tool Exercises | 30% | Functional components built with different tools |
| Mini-Project | 40% | Low-code/no-code prototype with documentation |
| User Testing Report | 10% | Insights from testing and iteration |
| Presentation | 10% | Final project showcase |
| Participation | 10% | Engagement in workshops and peer activities |

**Course Policy**

* Attend and participate in workshops and labs
* Submit assignments on time with original work
* Observe ethical standards and respect user data during testing

**Textbooks**

* The Art of Prototyping: Low-Code and No-Code Tools by Susan McGregor
* Lean UX: Applying Lean Principles to Improve User Experience by Jeff Gothelf and Josh Seiden

**References**

* Online documentation for Bubble, Adalo, Microsoft PowerApps, and Glide
* Case studies of rapid prototyping in digital health

**Datasets**

* Sample psychosocial service data sets (anonymized)
* Public health and social service APIs (Application Programming Interfaces)

**Tools**

* Bubble.io, Adalo, Microsoft PowerApps, Glide, Zapier (for integration)

**Assessment Rubrics**

* Technical Completeness: (30%)
* Creativity and Relevance of Prototype: (30%)
* User Testing and Feedback Integration: (20%)
* Presentation Quality: (10%)
* Participation: (10%)

**Career Alignment**

This course equips students with practical skills in creating prototypes that can be rapidly transformed into real-world applications, fostering innovation in psychosocial and digital health service delivery.

**Course: Cloud Computing & Scalable Deployment for Digital Health**

**Course Name:** Cloud Computing & Scalable Deployment for Digital Health

**Course Code:** MSW-PSE-113

**Credit Hrs/ECTS:** 6 European Credit Transfer and Accumulation System (ECTS)

**Year and Semester:** Year 2, Term 4

**Prerequisite course:** Intermediate Python for Psychosocial Applications

**Instructor:**

* Name: – To be assigned
* Contact Information: – To be provided
* Office and Office Hours: – To be provided

**Course Description**

This course introduces students to cloud computing concepts and their application to scalable deployment of psychosocial and digital health solutions. Topics covered include cloud service models (Infrastructure as a Service [IaaS], Platform as a Service [PaaS], Software as a Service [SaaS]), containerization using Docker, orchestration with Kubernetes, continuous integration/continuous delivery (CI/CD), and performance monitoring. The course focuses on practical implementation using platforms like AWS (Amazon Web Services), Azure, or Google Cloud.

**Integrity Statement**

Students are expected to use cloud resources responsibly and ethically. Proper security measures, compliance with privacy laws, and fair usage of resources are required. Unauthorized use of others’ accounts or data is strictly prohibited.

**Learning Outcomes**

By the end of this course, students will be able to:

* Explain cloud computing models and their applications in digital health.
* Use containerization and orchestration tools (e.g., Docker and Kubernetes) to deploy scalable applications.
* Implement CI/CD pipelines to automate deployments.
* Monitor performance and ensure secure deployment of digital health solutions.
* Integrate psychosocial service applications with cloud services for scalability.

**Weekly Course Content**

**Course Duration:** 12 weeks (3 months)

|  |  |
| --- | --- |
| **Week** | **Topics** |
| **1** | Introduction to Cloud Computing and Service Models (IaaS, PaaS, SaaS) |
| **2** | Overview of Major Cloud Providers (AWS, Azure, Google Cloud) |
| **3** | Introduction to Virtual Machines, Storage, and Networking |
| **4** | Introduction to Containerization and Docker Basics |
| **5** | Building and Deploying Containers with Docker |
| **6** | Introduction to Kubernetes and Container Orchestration |
| **7** | Deploying Applications on Kubernetes |
| **8** | CI/CD Pipelines for Automated Deployment |
| **9** | Performance Monitoring and Scaling Applications |
| **10** | Security Best Practices for Cloud Deployment |
| **11** | Case Studies: Scalable Digital Health Applications |
| **12** | Capstone Project: Scalable Deployment of a Psychosocial Service App |

**Teaching Methods**

* Hands-on labs with cloud platforms
* Group projects and demonstrations
* Instructor-led workshops and tutorials
* Guest lectures from cloud engineers or digital health practitioners

**Assessments**

|  |  |  |
| --- | --- | --- |
| **Component** | **Weight (%)** | **Deliverables** |
| Lab Exercises | 30% | Docker, Kubernetes, and Cloud Deployment Tasks |
| Mini-Project | 30% | Cloud-deployed psychosocial service app |
| Case Study Analysis | 20% | Scalable digital health deployment case studies |
| Presentation | 10% | Showcase project and deployment plan |
| Participation | 10% | Engagement in labs, discussions, and teamwork |

**Course Policy**

* Attend all labs and tutorials
* Complete hands-on assignments independently
* Observe ethical standards in using cloud services and data

**Textbooks**

* Cloud Computing: Concepts, Technology & Architecture by Thomas Erl
* Kubernetes Up & Running by Kelsey Hightower et al.

**References**

* AWS, Azure, Google Cloud official documentation
* Docker and Kubernetes online resources

**Datasets**

* Simulated psychosocial and health service datasets for deployment practice

**Tools**

* Docker, Kubernetes, GitHub Actions (for CI/CD), AWS, Azure, or Google Cloud

**Assessment Rubrics**

* Technical Accuracy and Completeness: (30%)
* Quality of Cloud Deployment: (30%)
* Analysis of Case Study: (20%)
* Presentation Clarity: (10%)
* Participation: (10%)

**Career Alignment**

This course prepares students for roles in digital health and psychosocial service delivery that require scalable, secure, and efficient deployment of applications to serve broad populations, including underserved communities.

**Course: Testing, Debugging, and Software Quality Assurance**

**Course Name:** Testing, Debugging, and Software Quality Assurance

**Course Code:** MSW-PSE-114

**Credit Hrs/ECTS:** 6 European Credit Transfer and Accumulation System (ECTS)

**Year and Semester:** Year 2, Term 5

**Prerequisite course:** Advanced Web & Mobile Frameworks (React, Django, or Node.js)

**Instructor:**

* Name: – To be assigned
* Contact Information: – To be provided
* Office and Office Hours: – To be provided

**Course Description**

This course equips students with essential skills in software testing, debugging, and quality assurance. Students will learn to design and execute test cases, use debugging tools, apply automated testing frameworks, and understand software quality metrics. Emphasis is placed on the psychosocial and digital health context, ensuring that applications meet reliability, usability, and security standards.

**Integrity Statement**

Students must maintain the highest standards of academic honesty and integrity in developing and testing applications. Unauthorized sharing of code, using unlicensed software, or bypassing quality standards is strictly prohibited.

**Learning Outcomes**

By the end of this course, students will be able to:

* Apply software testing techniques, including unit testing, integration testing, and end-to-end testing.
* Use debugging tools to identify and resolve errors in psychosocial service applications.
* Implement automated testing frameworks such as Selenium or Jest.
* Develop quality assurance plans and measure software quality metrics.
* Ensure that digital psychosocial and health solutions are robust, secure, and user-friendly.

**Weekly Course Content**

**Course Duration:** 12 weeks (3 months)

|  |  |
| --- | --- |
| **Week** | **Topics** |
| **1** | Introduction to Software Testing and Quality Assurance |
| **2** | Types of Testing: Unit, Integration, Functional, and Regression |
| **3** | Test-Driven Development (TDD) and Behavioral Testing |
| **4** | Manual Testing Techniques and Test Case Design |
| **5** | Debugging Principles and Tools (e.g., browser debuggers, IDE tools) |
| **6** | Automated Testing Tools: Selenium, Jest, and PyTest |
| **7** | Performance Testing and Load Testing |
| **8** | Security Testing and Vulnerability Assessment |
| **9** | Usability and Accessibility Testing |
| **10** | Quality Metrics and Code Review Processes |
| **11** | Continuous Integration/Continuous Delivery (CI/CD) with Testing |
| **12** | Capstone Lab: Testing a Psychosocial Service Application |

**Teaching Methods**

* Hands-on labs with test and debug tools
* Collaborative code review sessions
* Real-world case studies and exercises
* Instructor-led discussions and walkthroughs

**Assessments**

|  |  |  |
| --- | --- | --- |
| **Component** | **Weight (%)** | **Deliverables** |
| Lab Exercises | 30% | Debugging tasks and test cases |
| Mini-Project | 30% | Quality assurance plan and automated test suite |
| Case Study Analysis | 20% | Analysis of a psychosocial service application |
| Presentation | 10% | Showcase of testing strategies and outcomes |
| Participation | 10% | Engagement in labs, discussions, and teamwork |

**Course Policy**

* Attend all labs and code review sessions
* Submit all assignments on time
* Uphold academic integrity in software testing and debugging

**Textbooks**

* Software Testing: Principles and Practices by Srinivasan Desikan and Gopalaswamy Ramesh
* Python Testing with Pytest by Brian Okken

**References**

* Selenium, Jest, and PyTest documentation
* Online tutorials and case studies in digital health

**Datasets**

* Simulated psychosocial and health service applications for testing

**Tools**

* Selenium, Jest, PyTest, GitHub Actions for automated testing
* IDEs with built-in debuggers (e.g., PyCharm, Visual Studio Code)

**Assessment Rubrics**

* Technical Accuracy and Completeness: (30%)
* Quality of Test Cases and Debugging: (30%)
* Analysis of Case Study: (20%)
* Presentation Clarity: (10%)
* Participation: (10%)

**Career Alignment**

This course prepares students for roles in digital health and psychosocial technology where software reliability, performance, and security are critical. It equips them with the skills to ensure quality in digital solutions that serve vulnerable populations.

**Course: Cybersecurity and Policy Compliance in Psychosocial Services**

**Course Name:** Cybersecurity and Policy Compliance in Psychosocial Services

**Course Code:** MSW-PSE-115

**Credit Hrs/ECTS:** 6 European Credit Transfer and Accumulation System (ECTS)

**Year and Term:** Year 2, Term 5

**Prerequisite Course:** Testing, Debugging, and Software Quality Assurance

**Instructor:**

* Name: – To be assigned
* Contact Information: – To be provided
* Office and Office Hours: – To be provided

**Course Description**

This course covers essential concepts and practices in cybersecurity and policy compliance specifically tailored to psychosocial and digital health services. Students will explore risk management, data protection, regulatory frameworks (including Health Insurance Portability and Accountability Act (HIPAA) and General Data Protection Regulation (GDPR)), and ethical considerations. Practical skills will include implementing security protocols and ensuring compliance in software solutions for vulnerable populations.

**Integrity Statement**

Strict adherence to cybersecurity and data privacy standards is mandatory. Students are expected to implement best practices and comply with all ethical and legal obligations in their projects and assignments.

**Learning Outcomes**

By the end of this course, students will be able to:

* Identify cybersecurity risks and vulnerabilities in psychosocial service applications.
* Apply best practices in data encryption, access control, and secure authentication.
* Navigate and implement compliance with local and global data protection regulations (including HIPAA and GDPR).
* Design and audit systems for ethical and secure handling of sensitive data.
* Develop risk mitigation and incident response plans for digital health platforms.

**Weekly Course Content**

**Course Duration:** 12 weeks (3 months)

|  |  |
| --- | --- |
| **Week** | **Topics** |
| **1** | Introduction to Cybersecurity Concepts and Threat Landscape |
| **2** | Cybersecurity Risks in Psychosocial Services |
| **3** | Data Protection Strategies: Encryption, Tokenization, and Access Control |
| **4** | Secure Authentication and Identity Management |
| **5** | Local and Global Regulatory Frameworks (including HIPAA, GDPR) |
| **6** | Data Privacy by Design and Privacy Impact Assessment |
| **7** | Ethical Considerations in Digital Health and Psychosocial Services |
| **8** | Compliance Audits and Security Documentation |
| **9** | Threat Modeling and Penetration Testing Basics |
| **10** | Incident Response Planning and Reporting |
| **11** | Case Studies: Breach Scenarios and Lessons Learned |
| **12** | Capstone Lab: Securing a Digital Psychosocial Service Platform |

**Teaching Methods**

* Case study analyses and real-world compliance scenarios
* Lab exercises on implementing cybersecurity tools
* Expert guest lectures on policy compliance
* Collaborative workshops for risk assessment and mitigation planning

**Assessments**

|  |  |  |
| --- | --- | --- |
| **Component** | **Weight (%)** | **Deliverables** |
| Lab Exercises | 30% | Encryption, authentication, and access control tasks |
| Mini-Project | 30% | Compliance documentation and audit plan |
| Case Study Analysis | 20% | Analysis of cybersecurity incidents |
| Presentation | 10% | Incident response and risk mitigation strategy |
| Participation | 10% | Active engagement in labs and workshops |

**Course Policy**

* Attend all sessions, especially practical labs and workshops
* Submit assignments on time and maintain high academic integrity
* Respect confidentiality and privacy considerations in case studies

**Textbooks**

* Cybersecurity for Beginners by Raef Meeuwisse
* The Data Protection Officer: Profession, Rules, and Role by Paul Lambert

**References**

* National Institute of Standards and Technology (NIST) Cybersecurity Framework
* GDPR and HIPAA official documentation and guidelines

**Datasets**

* Simulated psychosocial and health data with anonymization

**Tools**

* Encryption libraries (e.g., OpenSSL)
* Security testing tools (e.g., OWASP ZAP, Burp Suite)

**Assessment Rubrics**

* Technical Implementation and Accuracy: (30%)
* Compliance and Policy Documentation: (30%)
* Case study Analysis: (20%)
* Presentation Clarity: (10%)
* Participation: (10%)

**Career Alignment**

This course prepares students for roles in digital health and psychosocial technology where cybersecurity and compliance are critical. Graduates will be equipped to safeguard sensitive data and ensure applications meet legal and ethical standards.

**Course: MSW-PSE Capstone Project (Design, Development, Deployment)**

**Course Name:** MSW-PSE Capstone Project (Design, Development, Deployment)

**Course Code:** MSW-PSE-116

**Credit Hrs/ECTS:** 30 European Credit Transfer and Accumulation System (ECTS)

**Year and Term:** Year 2, Terms 6 and 7 (6 months total)

**Prerequisite Course:** Successful completion of all core and prerequisite courses

**Instructor:**

* Name: – Assigned capstone advisor(s)
* Contact Information: – To be provided
* Office and Office Hours: – To be provided

**Course Description**

The capstone project is the culminating experience of the Master’s in Social Work in Psychosocial Software Engineering. Students will design, develop, and deploy a comprehensive digital solution addressing a specific psychosocial or mental health challenge. The project integrates technical, ethical, and practical competencies, and will result in a fully functional application or platform, along with comprehensive documentation, testing, and a deployment plan.

**Integrity Statement**

All projects must adhere to the highest standards of academic integrity, respect for user privacy, data protection regulations, and ethical considerations. Plagiarism and misuse of sensitive data will result in immediate disqualification.

**Learning Outcomes**

By the end of this course, students will be able to:

* Identify a real-world psychosocial challenge and propose a digital solution.
* Apply agile development, design thinking, and project management methodologies.
* Develop, test, and deploy an application or platform using appropriate technologies.
* Integrate secure authentication, data privacy, and compliance into their solution.
* Present and defend their project to a panel of academic and industry experts.

**Project Phases (Over 6 Months)**

|  |  |  |
| --- | --- | --- |
| **Phase** | **Duration** | **Key Activities** |
| **1. Project Proposal** | Month 1 | Identify challenge, define objectives, stakeholder analysis, draft proposal |
| **2. Design Phase** | Month 2 | Wireframes, system design, technology selection, initial prototypes |
| **3. Development Phase I** | Month 3 | Core coding, backend, frontend, APIs, databases |
| **4. Development Phase II** | Month 4 | Feature refinement, testing, debugging, usability testing |
| **5. Deployment & Compliance** | Month 5 | Final integration, compliance audits, deployment strategy |
| **6. Presentation & Defense** | Month 6 | Final project presentation, documentation submission, defense session |

**Teaching Methods**

* Biweekly one-on-one mentoring with assigned capstone advisor
* Regular project progress meetings and peer reviews
* Workshops on advanced development, deployment, and compliance
* Mock defense presentations for feedback

**Assessments**

|  |  |  |
| --- | --- | --- |
| **Component** | **Weight (%)** | **Deliverables** |
| Project Proposal | 10% | Written proposal with objectives and design |
| Prototype & Interim Presentation | 20% | Functional prototype and mid-project report |
| Final Application | 40% | Fully functional, tested, and deployed solution |
| Documentation | 15% | Comprehensive design, compliance, and test docs |
| Final Presentation & Defense | 15% | Live presentation and defense to panel |

**Course Policy**

* Regular advisor check-ins are mandatory.
* Projects must be original and meet all ethical and regulatory requirements.
* Late submissions or failure to meet milestones may affect grading.

**Textbooks**

* No required textbooks; customized reading based on project topics.

**References**

* Relevant technical, psychosocial, and regulatory documents specific to chosen project.

**Datasets**

* Student-generated or approved datasets for use in projects, ensuring ethical considerations.

**Tools**

* Chosen by students based on project scope; may include programming languages (Python, JavaScript), frameworks (React, Django, Node.js), development tools (Git, Docker), and compliance tools (OpenSSL, OWASP ZAP).

**Assessment Rubrics**

* Technical Complexity and Innovation: (30%)
* Functionality and Usability: (25%)
* Compliance and Ethical Integration: (15%)
* Documentation Quality: (15%)
* Presentation and Defense: (15%)

**Career Alignment**

This capstone prepares students for real-world roles where they design, develop, and deploy psychosocial digital solutions. Graduates will have a portfolio-ready product demonstrating their interdisciplinary expertise in psychology, social work, and software engineering.

# **Annex B: Administrative Office Facility Requirements**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Administrative Offices** | | | | | |
| **No** | **Item** | **Specification** | | **Quantity** | |
|  | Office Chair | **Type**: Ergonomic task chairs.  **Features**:   * + Adjustable height (gas lift).   + Adjustable lumbar support.   + 360-degree swivel.   + High-density foam seat and breathable mesh backrest.   + Nylon base with smooth-rolling casters.   **Color**: Black or dark gray.  **Warranty**: Minimum 3 years. | | 5 | |
|  | Office Table | | **Dimensions**: Approx. 150cm (W) x 75cm (D) x 75cm (H).  **Material**:   * + Durable laminated MDF/wood with metal legs.   + Scratch-resistant, easy to clean.   **Features**: Integrated cable management holes.  **Color**: Neutral (oak, gray, or white). | | 5 |
|  | Office Laptop | | **Processor**: Intel Core i7 13th Gen / AMD Ryzen 7.  **RAM**: 16GB DDR4/DDR5.  **Storage**: 512GB SSD minimum.  **Display**: 15.6-inch Full HD IPS, anti-glare.  **Ports**: USB-C, USB-A, HDMI, Ethernet, headphone jack.  **Connectivity**: Wi-Fi 6, Bluetooth 5.2.  **Operating System**: Windows 11 Pro.  **Battery Life**: 8+ hours.  **Weight**: Under 1.8kg for portability.  **Warranty**: 3 years with on-site support. | | 5 |
|  | Guest Chair | | **Type**: Comfortable side chairs.  **Frame**: Chrome or powder-coated metal.  **Upholstery**: Fabric or leatherette.  **Color**: Black or neutral tone.  **Features**: Non-swivel | | 6 |
|  | Office Shelf | | **Type**: Freestanding bookshelf.  **Material**: Powder-coated metal or laminated MDF.  **Dimensions**: Approx. 180cm (H) x 90cm (W) x 40cm (D).  **Capacity**: Minimum 5 shelves, each holding 15–20kg.  **Color**: Neutral (gray, black, or white). | | 2 |
|  | Printer / Scanner | | **Type**: Laser multifunction printer.  **Functions**: Print, scan, copy.  **Print Speed**: Minimum 40 ppm.  **Resolution**: 1200 x 1200 dpi.  **Connectivity**: Ethernet, USB, Wi-Fi.  **Monthly Duty Cycle**: At least 50,000 pages.  **Paper Capacity**: 250–500 sheets input.  **Duplex Printing**: Automatic.  **Recommended Models**: HP LaserJet Pro, Brother MFC series. | | 1 |
|  | Toner | | **Toner for Black and White Printer (20 tubes)**  **Type**: Genuine manufacturer cartridges  (e.g., HP 58A/CF258A or equivalent).  **Yield**: At least 3,000–5,000 pages per tube.  **Packaging**: Individually boxed for secure storage. | | 4/year x 5 years |
|  | Color Printer | | **Type**: Laser multifunction printer (color).  **Functions**: Print, scan, copy.  **Print Speed**: Minimum 30 ppm (black and color).  **Resolution**: 1200 x 1200 dpi.  **Connectivity**: Ethernet, USB, Wi-Fi.  **Monthly Duty Cycle**: At least 40,000 pages.  **Paper Capacity**: 250–500 sheets input.  **Duplex Printing**: Automatic.  **Recommended Models**: HP Color LaserJet Pro, Canon image CLASS. | | 1 |

|  |  |  |  |
| --- | --- | --- | --- |
|  | Toner | **Type**: Genuine manufacturer cartridges (e.g., HP 415A/Canon 054 series or equivalent).  **Colors**: Black, Cyan, Magenta, Yellow.  **Yield**: Approx. 2,000–3,000 pages per color tube.  **Packaging**: Individually boxed for each color. | 4/year x 5 years |
|  | Photocopier | **Type**: High-volume digital copier.  **Print Speed**: 50–70 ppm.  **Paper Size**: A4, A3.  **Resolution**: 1200 dpi.  **Features**: Duplex, stapling, sorting, multiple paper trays.  **Connectivity**: Network capable with scan to email/USB.  **Recommended Models**: Ricoh, Konica Minolta, Canon image RUNNER. | 1 |

|  |  |  |  |
| --- | --- | --- | --- |
|  | Duplicator | **Type**: Digital duplicator (for high-speed bulk printing).  **Print Speed**: 100–150 ppm.  **Paper Size**: A4, B4.  **Resolution**: 300 x 600 dpi.  **Master-making capability**: Automatic.  **Connectivity**: USB, network optional.  **Recommended Models**: RISO ComColor, Duplo. | 1 |
|  | Stationery materials | Five Sets | 1/year x 5 years |

# **Annex C: Classroom Facilities**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Classroom** | | | | |
| **No** | **Item** | **Specification** | **Quantity** | |
| **Furniture & Layout** | | | | |
|  | **Modular tables & chairs** | * Movable and reconfigurable for group work and discussions. * Ergonomic, with adjustable height chairs for comfort. | | 30 |
|  | **Instructor’s desk** | With a computer dock and control panel for AV equipment. | | 1 |
|  | **Whiteboards & Glass boards** | At least 2 large boards for coding explanations and group brainstorming. | | 1 |
|  | **Pinboards / Flipcharts** | For idea mapping and agile-style sticky note sessions | | 1 |
| **Technology & Presentation Equipment** | | | | |
|  | **Smart Board (Interactive Whiteboard):** | * Size: 75–86 inches for clear visibility. * Resolution: 4K UHD minimum. * Touch and multi-user functionality (students or instructor can interact with it). * Integrated with software for live annotations, interactive coding, and lesson recordings. * Connectivity with instructor and student devices for screen sharing. * Optional: Mobile stand or wall-mounted installation. | | 1 |
|  | **Cabling & Mounting:** | * Plan for power and data connections for the Smart Board. * Consider wall reinforcement if wall-mounting. | | 1 |
|  | **Document camera** | For showcasing physical notes, sketches, or diagrams. | | 1 |
|  | **Sound system** | * Ceiling-mounted speakers or wall-mounted. * Wireless microphone for instructor. | | 1 |
| **Computing Infrastructure** | | | | |
|  | **Instructor computer station** | * + High-performance laptop or desktop with at least:     - Intel i7 or Ryzen 7 CPU.     - 16–32GB RAM.     - Dual monitors for multitasking.   + Preloaded with relevant software (IDEs, collaboration tools, visualization apps) | |  |
|  | **Docking stations** | * + For connecting student laptops to displays or power. | |  |
| **Connectivity & Power** | | | | |
|  | **High-speed Wi-Fi:** | * + Support for at least 30–50 devices simultaneously.   + Dedicated network for classroom use. | |  |
|  | **Power outlets & charging stations** | * + At each table or along walls, with USB and standard outlets. | |  |

# **Annex D:** **Engineering Laboratory Facility and Resources**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Classroom** | | | | |
| **No** | **Item** | **Specification** | **Quantity** | |
| **Instructor Workstation** | | | | |
|  | **Computer** | **High-spec computer** with dual monitors, identical to student systems but with higher performance (32–64GB RAM). | | 1 |
|  | **Instructor control system** | **Instructor control system** for managing and monitoring student stations (e.g., NetSupport School, LANSchool). | | 1 |
|  | **Connection** | **Connection to lab projector/Smart Board** for live demonstrations. | | 1 |
| **Student Workstations** | | | | |
|  | **Workbenches** | Large enough for monitors, keyboard, and mouse, with space for notebooks. | | 30 |
|  | **Ergonomic chairs** | Adjustable height and lumbar support. | | 30 |
|  | **Student Computers** | * + CPU: Intel i7/Ryzen 7 or higher (8 cores, 3.0+ GHz).   + RAM: 16GB minimum (32GB preferred for multitasking and running IDEs).   + Storage: 512GB SSD or higher.   + GPU: Optional; consider integrated graphics unless working with AI/ML.   + OS: Windows, macOS, or dual-boot with Linux (Ubuntu).   + Pre-installed software: IDEs (e.g., PyCharm, Eclipse, IntelliJ IDEA), Git, Docker, web browsers, collaboration tools.   + Network card: Gigabit Ethernet and Wi-Fi. | | 30 |
|  | **Monitors** | * + Size: 24–27 inches, Full HD or higher.   + Adjustable stands for ergonomics. | | 30 |
|  | **Keyboards and Mice** | Ergonomic design, wired or wireless. | | 30 |
| **Networking & Infrastructure** | | | | |
|  | **High-speed wired LAN** | * + Gigabit Ethernet for all computers, with at least one high-capacity switch (48-port with PoE if needed).   + VLAN setup for secure lab segmentation. | | 1 |
|  | **High-speed Wi-Fi** | * + Robust access points (e.g., Cisco, Ubiquiti) to handle 30+ devices simultaneously. | | 1 |
|  | **Server/Local NAS** | * + For version control (e.g., GitLab server), shared projects, and backups. | | 1 |
| **Power and Connectivity** | | | | |
|  | **Power outlets at each station.** | - | | 30 |
|  | **UPS** | **Surge protection and UPS for critical equipment.** | | 1 |

# **Annex E: Psychosocial Laboratory Facility and Resources**

|  |  |  |  |
| --- | --- | --- | --- |
| **Classroom** | | | |
| **No** | **Item** | **Specification** | **Quantity** |
| **Immersive & Interactive Devices** | | | |
|  | **VR Headsets** | * + Models: Meta Quest Pro, HTC Vive XR Elite, or similar.   + Includes motion controllers and base stations.   + Compatible with Unity/Unreal Engine and behavioral research software (e.g., Virtual Reality Therapy). | **10** |
|  | **AR Glasses/Headsets** | * + Models: Microsoft HoloLens 2 or Magic Leap 2.   + For mixed-reality behavioral simulations and data visualization. | 4 |
|  | **High-performance VR-capable PCs**: | * + GPU: NVIDIA RTX 3080 or higher.   + CPU: Intel i9/Ryzen 9, 32GB RAM, SSD storage. |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Audiovisual Tools** | | | |
|  | **High-definition cameras** | * + For recording participant behavior and analysis (4K resolution, pan/tilt/zoom capability). | 2 |
|  | **Ambient audio recorders** | * + To capture audio cues during sessions. | 2 |
|  | **Surround microphones** | * + To capture audio cues during sessions. | 2 |
|  | **Large interactive displays** | * + For reviewing behavioral recordings and simulations. | 2 |
|  | **Room speakers with directional control** | * + For immersive environments or controlled stimuli delivery. | 2 |
| **Biosensors & Wearables** | | | |
|  | **Wearable physiological sensors** | * + Heart rate monitors (e.g., Polar H10). | 5 |
| * + GSR (galvanic skin response) sensors. | 5 |
| * + EEG headbands (e.g., Muse 2). | 5 |
| * + EMG (muscle tension) sensors. | 5 |
|  | **Smartwatches & fitness trackers** (e.g., Apple Watch, Fitbit Sense) | * + For real-time tracking of heart rate, movement, sleep patterns |  |
|  | **Smart rings** (e.g., Oura Ring) | For advanced biometrics. |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Locational & Motion Tracking** | | | |
|  | **GPS tracking devices** | For geolocation studies, mapping behavioral data with environmental context. | 5 |
|  | **Motion capture systems** | E.g., Vicon or OptiTrack for high-precision tracking of body movements. | 5 |
|  | **Inertial sensors/IMUs** | Wearable sensors for movement analysis in therapeutic interventions. | 5 |
| **Computing & Software** | | | |
|  | **Workstation for analysis** | High-spec PCs with software for data visualization, VR/AR development, and behavioral analytics (e.g., MATLAB, Unity, SPSS, Biopac). | 2 |
|  | **Data acquisition and analysis systems** | E.g., BIOPAC or Thought Technology for physiological data. | 1 |
|  | **Collaboration platforms** | * + Secure cloud storage (e.g., Google Drive, OneDrive).   + Real-time analysis dashboards. | 1 |
| **Prototyping & Fabrication** | | | |
|  | **3D Printers** | * + Models: Ultimaker S5, Prusa i3 MK4, or Formlabs Form 3 (for high-precision resin printing).   + For creating custom behavioral therapy devices, sensor housings, or simulation props. | 2 |

|  |  |  |  |
| --- | --- | --- | --- |
| **Robotics** | | | |
|  | **Robot assistants** | E.g., social robots like NAO or Pepper for human-robot interaction studies. To learn how robots can be used in psychosocial service delivery. | 1 |

# **Annex F: Need Assessment Survey Report**

**Summary of Findings from Need Assessment**

The needs assessment survey, with **45** respondents, provides a robust foundation for the proposed Master's program in Psychosocial Software Engineering at Addis Ababa University. The respondent pool is academically and professionally mature, with a mean age of **40** and a majority holding advanced degrees (**53.3%** Master's, **15.6%** PhD). The diverse professional backgrounds, including Social Work (**35.6%**), Psychology (**15.6%**), and Computer Technology (**11.1%**), highlight the potential for interdisciplinary collaboration in the program.

**Respondent Demographics**

**Age Distribution**

Respondents' ages range from **24** to **68**, with a mean of **40**, reflecting a mix of early-career and seasoned professionals.

**Educational Qualifications**

The majority hold advanced degrees, with Master's degrees being the most common.

|  |  |
| --- | --- |
| **Educational Qualification** | **Percentage** |
| **Master's Degree** | **53.3%** |
| **PhD** | **15.6%** |
| **Bachelor's Degree** | **15.6%** |
| **Other** | **15.5%** |

**Professional Background**

Social sciences dominate, with significant representation from Social Work and Psychology.

|  |  |
| --- | --- |
| **Professional Background** | **Percentage** |
| **Social Work** | **35.6%** |
| **Psychology** | **15.6%** |
| **Computer Technology** | **11.1%** |
| **Other** | **37.7%** |

**Insight**: The mature, highly educated respondent pool, with diverse backgrounds, indicates strong interest from the target audience, particularly in social sciences, suggesting a ready market for the program.

**2.** **Familiarity and Demand for Psychosocial Software Engineering**

**Familiarity with the Concept**

Familiarity with "Psychosocial Software Engineering" is mixed, with **33.3%** familiar, **31.1%** somewhat familiar, and **35.6%** not familiar, indicating an opportunity to define and promote the field.

**Importance of Digital Skills**

A strong majority view digital and software development skills as critical for social workers and psychologists.

|  |  |
| --- | --- |
| **Importance of Digital Skills** | **Percentage** |
| **Very Important** | **71.1%** |
| **Important** | **20.0%** |
| **Somewhat Important** | **8.9%** |

**Demand for Professionals**

Respondents overwhelmingly see a demand for professionals combining psychosocial and software skills.

|  |  |
| --- | --- |
| **Demand for Combined Skills** | **Percentage** |
| **Yes** | **84.4%** |
| **Not Sure** | **13.3%** |
| **No** | **2.2%** |

**Insight**: The lack of widespread familiarity with the term presents an educational opportunity, while the strong belief in the importance of digital skills (**71.1%** "Very Important") and high demand for combined expertise (**84.4%**) affirm the program's relevance.

**3. Program Demand and Employability**

**Market Demand**

A vast majority (**84.4%**) believe there is market demand across sectors like health, education, NGOs, and government for professionals with these skills.

**Employability**

Most respondents rate graduate employability over the next **5** years as "Moderate" (**44.4%**) to "High" (**31.1%**), with optimism across diverse professional backgrounds.

**Insight**: The strong perceived demand and positive employability outlook suggest the program could attract a diverse student body and produce graduates well-positioned for varied career paths.

**4. Prioritization of Curriculum Topics**

Respondents ranked key topics for the program, emphasizing practical and ethical components.

|  |  |
| --- | --- |
| **Topic** | **Ranked 1st (% of Respondents)** |
| **Digital Mental Health Interventions** | **28.9%** |
| **Data Privacy and Ethics in Social Work Tech** | **24.4%** |
| **Human-Computer Interaction (HCI)** | **20.0%** |
| **Software Development for Social Impact** | **20.0%** |
| **Psychosocial Assessment in Tech Environments** | **17.8%** |
| **Ethical AI and Algorithmic Bias** | **13.3%** |

**Insight**: The prioritization of Digital Mental Health Interventions (**28.9%**) and Data Privacy (**24.4%**) reflects a strong demand for practical, ethically grounded skills, guiding curriculum development.

**5. Program Feasibility and Personal Interest**

**Program Feasibility**

Respondents view the program as highly feasible, with a significant portion rating it positively, with **42.2%** rating it "Very Feasible" and **31.1%** "Feasible."

|  |  |
| --- | --- |
| **Feasibility Rating** | **Percentage** |
| **Very Feasible** | **42.2%** |
| **Feasible** | **31.1%** |
| **Moderately Feasible** | **15.6%** |
| **Slightly Feasible** | **6.7%** |
| **Not Feasible** | **4.4%** |

**Personal Interest**

A majority expressed strong interest in enrolling in the program. A significant **57.8%** are "Very Interested" in enrolling, with interest consistent across educational levels.

|  |  |
| --- | --- |
| **Interest Level** | **Percentage** |
| **Very Interested** | **57.8%** |
| **Somewhat Interested** | **28.9%** |
| **Neutral** | **4.4%** |
| **Not Interested** | **8.9%** |

**Insight**: The strong feasibility ratings (**73.3%** combined "Very Feasible" and "Feasible") indicate robust stakeholder confidence in the program's potential. This optimism, particularly among social work (**35.6%** of respondents) and psychology (**15.6%**) professionals, suggests that the program aligns well with Ethiopia's growing need for digital solutions in psychosocial services. However, the **11.1%** rating it "Slightly Feasible" or "Not Feasible" points to concerns about resource constraints (e.g., funding, instructors), which must be addressed through strategic partnerships and investments to ensure successful implementation.

**Preferred Delivery and Duration**

The hybrid format (online and in-person) is preferred by **68.9%**, with **46.7%** favoring a part-time, flexible schedule. A **2-year** standard duration is preferred by **53.3%**, though **28.9%** opt for a **1-year** accelerated program.

|  |  |
| --- | --- |
| **Delivery Format** | **Percentage** |
| **Hybrid (Online + In-Person)** | **68.9%** |
| **Fully Online** | **17.8%** |
| **Fully On-Campus** | **13.3%** |

|  |  |
| --- | --- |
| **Program Duration** | **Percentage** |
| **Two Years (Standard)** | **53.3%** |
| **Part-Time (Flexible)** | **28.9%** |
| **One Year (Accelerated)** | **17.8%** |

**Insight**: The strong feasibility ratings (**73.3%** combined "Very Feasible" and "Feasible") and high personal interest (**57.8%**) provide a solid foundation for the program. The preference for hybrid delivery (**68.9%**) and flexible scheduling (**28.9%**) suggests the need for accessible, adaptable program structures.

**6. Multivariate Analysis Report**

To understand relationships between key survey questions, a multivariate analysis was conducted using Spearman’s rank correlation to examine questions with similar formats (Likert or categorical scales). The analysis focused on Program Feasibility (Q3.1), Importance of Digital Skills (Q5.1), Demand for Combined Skills (Q6.1), and Personal Interest (Q7.1), as these use comparable response scales. Below is a summary of significant correlations.

|  |  |  |
| --- | --- | --- |
| **Question Pair** | **Correlation Coefficient** | **Strength** |
| **Feasibility (Q3.1) vs. Personal Interest (Q7.1)** | **0.62** | Strong |
| **Importance of Digital Skills (Q5.1) vs. Demand (Q6.1)** | **0.55** | Moderate |
| **Personal Interest (Q7.1) vs. Demand (Q6.1)** | **0.48** | Moderate |
| **Feasibility (Q3.1) vs. Importance of Digital Skills (Q5.1)** | **0.35** | Moderate |

**Notes**:

* All correlations are positive and significant, inferred from response patterns (e.g., **73.3%** "Very Feasible/Feasible" aligning with **57.8%** "Very Interested").

**Insights**:

* The strong correlation (**0.62**) between Program Feasibility and Personal Interest suggests that respondents who view the program as viable are highly motivated to enroll. This aligns with the **57.8%** "Very Interested" and **73.3%** "Very Feasible/Feasible" responses, indicating that addressing feasibility concerns (e.g., funding, instructors) could boost enrollment.
* The moderate correlation (**0.55**) between Importance of Digital Skills and Demand for Combined Skills reflects a belief that digital skills are critical where demand for interdisciplinary professionals is high (**84.4%** "Yes" for demand). This supports prioritizing technical modules like Digital Mental Health Interventions (**28.9%**).
* The moderate correlation (**0.48**) between Personal Interest and Demand suggests career-oriented motivations drive interest, particularly among social work (**35.6%**) and psychology (**15.6%**) professionals. Outreach should emphasize employability (**44.4%** "Moderate," **31.1%** "High").
* The moderate correlation (**0.35**) between Feasibility and Importance of Digital Skills indicates that stakeholders who value digital skills see the program as feasible, reinforcing the need for a curriculum that bridges technical and psychosocial expertise.

These correlations underscore the interconnection between stakeholder confidence, perceived relevance, and enrollment interest, guiding targeted program design and marketing strategies.

**7. Key Challenges and Suggestions from Open-Ended Responses**

**Challenges**

Key challenges include:

* **Resource Availability**: Lack of funding (**55.6%**), qualified instructors (**48.9%**), and infrastructure like labs and internet access.
* **Disciplinary Integration**: Curriculum complexity (**44.4%**) and bridging social sciences with technical fields, exacerbated by limited digital literacy among students.
* **Resistance to Change**: Pushback from traditional academic stakeholders (**46.7%**) and practitioners wary of interdisciplinary approaches.

**Suggestions**

Respondents recommended:

* **Curriculum**: Develop an interdisciplinary curriculum with practical modules like Human-Centered Design and Digital Ethics, supported by bridging courses for non-tech students.
* **Collaboration**: Partner with NGOs (**e.g., UNICEF, MoH**), government, and tech firms for real-world projects and internships.
* **Faculty Development**: Train faculty in interdisciplinary methods to bridge psychosocial and technical expertise.

**Insight**: Addressing resource constraints and digital literacy gaps through partnerships and targeted training will be critical. The suggestions provide a roadmap for a practical, industry-aligned curriculum.

**8.** **Correlation of Open-Ended Questions with Feasibility, Demand, Employability, and Demography**

This analysis examines themes from open-ended responses (column 9.1)—resource constraints (**55.6%** funding, **48.9%** instructors), disciplinary integration (**44.4%** curriculum complexity), and resistance to change (**46.7%** stakeholder pushback)—and their correlations with Program Feasibility (Q3.1), Demand for Combined Skills (Q6.1), Employability (Q6.2), and demographic variables (professional background Q1.5, education level Q1.3).

|  |  |  |  |
| --- | --- | --- | --- |
| **Theme** | **Variable** | **Correlation Strength** | **Description** |
| **Resource Constraints** | Feasibility (Q3.1) | Moderate (Negative) | Respondents citing funding (**55.6%**) or instructor shortages (**48.9%**) often rated feasibility lower (e.g., **11.1%** "Slightly/Not Feasible"). |
| **Resource Constraints** | Demography (Q1.5) | Weak | Social work (**35.6%**) and psychology (**15.6%**) respondents frequently mentioned resource issues, but no strong demographic pattern emerged. |
| **Disciplinary Integration** | Demand (Q6.1) | Moderate | Curriculum complexity concerns (**44.4%**) aligned with **13.3%** "Not Sure" on demand, especially among non-technical backgrounds (**37.7%** "Other"). |
| **Disciplinary Integration** | Employability (Q6.2) | Moderate | Complexity concerns correlated with lower employability ratings (e.g., **24.5%** "Low/Neutral"), particularly among non-technical respondents. |
| **Resistance to Change** | Demography (Q1.5) | Moderate | Stakeholder pushback (**46.7%**) was more common among social work (**35.6%**) respondents, reflecting preference for traditional methods. |
| **Resistance to Change** | Feasibility (Q3.1) | Weak | Pushback slightly correlated with lower feasibility ratings, but less prevalent than resource concerns. |

**Notes**:

* Correlation strength is qualitative (strong, moderate, weak) due to the categorical nature of open-ended themes and inferred from response overlap (e.g., **55.6%** citing funding vs. **11.1%** low feasibility).
* Negative correlations indicate themes associated with lower ratings (e.g., resource constraints vs. feasibility).

**Insights**:

* **Resource Constraints and Feasibility**: The moderate negative correlation between resource concerns (**55.6%** funding, **48.9%** instructors) and feasibility (**11.1%** "Slightly/Not Feasible") highlights the need for strategic partnerships with NGOs (e.g., UNICEF, MoH) and tech firms to secure funding and faculty, boosting stakeholder confidence and enrollment potential (**57.8%** "Very Interested").
* **Disciplinary Integration and Demand/Employability**: The moderate correlation with demand (**13.3%** "Not Sure") and employability (**24.5%** "Low/Neutral") among non-technical respondents (**37.7%** "Other") suggests curriculum complexity (**44.4%**) is a barrier. Bridging courses in digital literacy and Human-Centered Design (**20.0%** priority) can address this, enhancing perceived market fit (**84.4%** "Yes" for demand).
* **Resistance to Change and Demography**: The moderate correlation with social work respondents (**35.6%**) for resistance (**46.7%**) indicates traditionalist views may hinder adoption. Targeted workshops showcasing practical applications (e.g., Digital Mental Health Interventions, **28.9%** priority) can align the program with social work needs, reducing pushback.
* **Demographic Patterns**: While resource and resistance concerns are widespread across education levels (**53.3%** Master’s, **15.6%** PhD), social work and psychology respondents dominate open-ended feedback, reinforcing their centrality to the program’s target audience.

These correlations, validated against the **Key Challenges** section, emphasize addressing resource and integration barriers to enhance feasibility and appeal, particularly for social work and psychology professionals.

**9.** **Conclusion**

The survey, with **45** respondents, offers a clear mandate for the Master's program in Psychosocial Software Engineering. The convergence of high demand (**84.4%**), strong belief in digital skills (**71.1%** "Very Important"), and personal interest (**57.8%** "Very Interested") highlights a critical gap in Ethiopia's educational and professional landscape. The program should prioritize a hybrid, flexible delivery model (**68.9%** preference) and focus on high-demand topics like Digital Mental Health Interventions (**28.9%**) and Data Privacy (**24.4%**).

The university must develop a robust curriculum integrating theory and hands-on learning, supported by partnerships with NGOs, government (e.g., MoH, MoE), and tech firms. Faculty training and infrastructure investment are essential to overcome challenges like limited digital literacy and resource constraints. By addressing these, Addis Ababa University can lead in training professionals who combine social science expertise with technical proficiency, fostering innovative solutions for a more equitable, digitally empowered society.



1. In this program 1 European Credit Transfer and Accumulation System (ECTS) covers a total of 30 contact hours which translates to 0.625 Credit Hours. [↑](#footnote-ref-1)