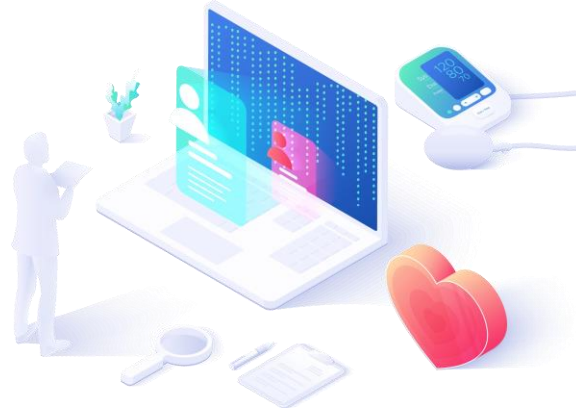


HPCH 209 eHealth for Public Health

[2 credits]



Course Syllabus Spring Semester, Academic Year: 2021-22 Last updated: January 5, 2022

Course Instructor

Dr. Marco Bardus

Email: mb141@aub.edu.lb

Office hours: **exclusively by appointment** (via email)

Class time and location

Dates, times: **Fridays at 11:00-12:40 pm (Beirut Time)**

Classroom: **Van Dyck room 332, set for remote meetings (via WebEx)**

Course description

Social media and mobile apps have become ubiquitous in nearly all aspects of our lives. These technologies are changing the ways healthcare providers interact with and deliver care to their clients. Digital technologies have also changed the way researchers design and implement health promotion and intervention programs, and consumers gather health information and make health decisions. This course is designed to introduce students to eHealth, which encompasses the use of digital technologies to deliver healthcare programs and to promote health among different publics. eHealth or digital health encompasses, telehealth (telecare, telemedicine, tele-coaching, tele-rehab), technology-enabled care services, mobile apps, and social media for health promotion campaigns. Examples of digital health applications include video links for remote consultations, monitoring systems, mobile apps, software to support rehabilitation, environmental technology. We will explore how digital technologies can be used to address public health issues, considering methodological, conceptual, ethical, and design issues.

Course learning objectives

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

1. Define and correctly use the terminologies relevant to digital health (e.g., Medicine 2.0, e-patients, eHealth, Big Data, infodemiology, infoveillance).

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2. Understand how mobile apps and social media tools are used in healthcare, health research, and health promotion, and critically assess the benefits and risks associated with these tools.
3. Show proficiency in current eHealth trends and issues and be able to conceptualize, design, and evaluate web-based, user-centered health communication interventions guided by theory.
4. Create strategic health communication using various forms of media, including television, the Internet, radio, newspapers, magazines, and digital media.

Competencies

This course's objectives and learning activities are aligned with the foundational domains, foundational competencies, cross-cutting experiences, and experiential activities required for a Public Health Bachelor's degree, according to the Council on Education for Public Health (CEPH).

Competencies in foundational domains: This course allows students to understand the basic concepts of public health-specific communication, including technical and professional writing and the use of mass media and electronic technology.

Foundational competencies: The course serves to purpose of enhancing the ability to communicate public health information, in both oral and written forms, through a variety of media and to diverse audiences

Format and modes of delivery

The course will be exceptionally delivered online for this semester, so we will meet in 'live' sessions, according to the course calendar (see below). The live sessions will be hosted on **WebEx**, which is the preferred platform at AUB. All live sessions will be recorded and reposted on Moodle, AUB's learning management system. The instructor will send course-related communications via **Moodle messages or forum posts**, so remember to check your inbox frequently not to miss any important course-related information.

We will use a **flipped classroom design**, whereby in class we will agree on topics that we will cover in class. You, together with another colleague, will choose a topic to present so that you can better engage into class activities.

The live sessions (lectures or Q&A sessions) will take approximately **120 mins/week**; Homework, preparing for classes, etc. should take up to **2-3 hours/week [1 credit]**.

Course requirements and student evaluations

You will be evaluated according to the following criteria:

Evaluation	Grade (individual)	Grade (group)	Learning Outcomes
A1) Participation in course activities	15%		1
A2) Essay on digital health interventions	25%		1-2
A3) Review of apps and project	10%	50%	3-4
Total	50%	50%	

1) Participation in course activities (individual assignment: 15%) means presenting topics and engaging in discussions during live sessions and contributing to online discussions and not

just attending the classroom meetings. Participation will be assessed through a Karma Participation Point system, which attributes points for completing “good actions” in class and outside.

2) Essay on digital health interventions (individual assignment: 25%). The purpose of this assignment is to review the literature on the use of digital health tools to promote selected public health issues. This serves as the basis for the third assignment.

3) Review of health apps and development framework (individual 10%, group 50%). The purpose of this assignment is to review existing mobile apps addressing a selected public health issue and propose alternative digital health solutions. In groups of 3-4, you will:

- conduct a rapid review of mobile apps identified through a pre-defined search strategy and selection process.
- develop a set of recommendations for developing a new digital solution for the problem
- present in class your solution.

Detailed information on each assignment will be provided at least two weeks before the due date. All assignments will be posted on Moodle.

Course (n)etiquette

✓ **Class participation and dealing with uncertainties**

We all know how uncomfortable and frustrating it is to attend online lectures and meetings, sitting in front of a computer, with limited and poor internet connection. In addition to the COVID-19 pandemic, we are now living through an unprecedented energetic crisis, which is also coupled with many other crises which generate uncertainties for the present and the future.

It is very difficult to plan a few days ahead, so we need to be **flexible** be ready to change, as plans might change, and solutions need to be found. We will go through these changes together and we'll find solutions together. I'd like you to feel free to share your concerns and vent out your frustrations during the meetings, via online forums, emails, or WhatsApp.

When meeting virtually, we need to:



Be ready for the meeting, make sure you are online and ready for the live session at **least 5 minutes** in advance, to make sure your connection is stable and that you don't encounter technical issues. If you do face technical issues, please promptly inform your colleagues and the instructor via WhatsApp.



Show your reactions, by turning your camera on, if you can, as much as possible; this may slow your connection, but this is the only way you can show your non-verbal reactions to the content provided and it is fundamental when you cannot meet someone in person.



Engage, by participating in the discussions, asking questions, and contributing actively to classroom activities (you will be graded on these) whether synchronously or asynchronously (at your own pace).



Avoid distractions while attending a session, by silencing your phones and leaving them out of sight, not checking your emails, closing open browsers. It is a matter of respect for the instructor and for other colleagues who want to follow the session.

AUB/FHS policies

✓ **Attendance**

Attendance will be taken and recorded on Moodle. You need to be ready and attend classes **on time**; if you cannot attend a class, you should notify the instructor beforehand. If you miss more than one-fifth of the online sessions of any course in the first ten weeks of the semester you may be dropped from the course.

✓ **Academic Integrity**

Cheating and plagiarism will not be tolerated. Review [the Student Code of Conduct](#) in your handbook and familiarize yourself with definitions and penalties. If you are in doubt about what constitutes plagiarism, ask your instructor because it is your responsibility to know. The American University of Beirut has a strict anti-cheating policy. Penalties include failing marks on the assignment in question, suspension or expulsion from University and a permanent mention of the disciplinary action in the your records.

✓ **Non-Discrimination – Title IX – AUB**

AUB is committed to facilitating a campus free of all forms of discrimination including sex/gender-based harassment prohibited by Title IX. The University’s non-discrimination policy applies to, and protects, all students, faculty, and staff. If you think you have experienced discrimination or harassment, including sexual misconduct, we encourage you to tell someone promptly. If you speak to a faculty or staff member about an issue such as harassment, sexual violence, or discrimination, the information will be kept as private as possible, however, faculty and designated staff are required to bring it to the attention of the University’s Title IX Coordinator. Faculty can refer you to fully confidential resources, and you can find information and contacts at www.aub.edu.lb/titleix. **To report an incident**, contact the University’s Title IX Coordinator Ms. Mitra Taouk at 01-350000 ext. 2514, or titleix@aub.edu.lb. An anonymous report may be submitted online via EthicsPoint at www.aub.ethicspoint.com.

✓ **Accessible Education Office (AEO)**

The Accessible Education Office (AEO) coordinates academic accommodations and services for all eligible AUB students with disabilities (such as ADHD, learning difficulties, mental health conditions, chronic or temporary medical conditions, and others). If you have a disability for which you wish to request accommodations at the department, faculty or university level, please contact AEO as soon as possible. Once you register with our office, we will assist you in receiving appropriate accommodations and will liaise with your instructors and any related entity to best support your needs. AEO is located in West Hall room 314, and can be reached by phone at 1-350000 ext. 3246 or by email: accessibility@aub.edu.lb. Information about our services can be found at: <https://www.aub.edu.lb/SAO/Pages/Accessible-Education.aspx>

Proposed course outline

Legend: Bolded readings are required for the class.

Sessions (dates)	Topics Covered and Activities	Readings	Learning Objectives
Week 1 21/1/2022	<i>Course Overview: What is eHealth? Why is it important for Health? Scoping the field</i>	Eysenbach, 2001; Oh et al., 2005 Shaw et al., 2017	1, 2

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Sessions (dates)	Topics Covered and Activities	Readings	Learning Objectives
Week 2 28/1/2022	<i>eHealth definitions, research and applications</i>	Ahern et al., 2006; Jones et al., 2005; Pagliari et al., 2005 Boogerd et al, 2015	1, 2
Week 3 4/2/2022	<i>eHealth and Medicine 2.0</i>	Eysenbach, 2008; Van De Belt et al., 2010	1, 2
Week 4 11/2/2022	<i>Health Surveillance and Infodemiology</i>	Eysenbach, 2009	1, 2
Week 5 18/2/2022	<i>Consumer Health: Health Information Seeking, e-Patients, and the “Quantified Self”</i>	Black et al., 2011 Townsend et al., 2015 Rolls et al., 2016 Swan, 2013	1, 2
24/2/2022	A2) Essay due		
Week 6 25/2/2022	<i>Health and eHealth Literacy</i> <i>Working on a review of health apps: group formation and topic selection</i>	Norman & Skinner, 2006 Norman, 2011 Eysenbach, 2020	1, 2
Week 7 4/3/2022	<i>Health Promotion & Intervention via Social Media</i> <i>Working on a review of health apps: Developing searches</i>	Welch et al., 2016 El Benny et al., 2021	1, 2
Week 8 11/3/2022	<i>Working on a review of health apps: Inclusion criteria, app selection</i>		3, 4
Week 9 18/3/2022	<i>Working on a review of apps: data extraction and quality appraisal</i>	Azad-Khaneghah et al. (2021)	3, 4
Week 10 25/3/2022	Annunciation day, no classes		
Week 11 1/4/2022	<i>Working on a review of apps: data analysis</i>		3, 4
Week 12 8/4/2022	<i>Working on a review of apps: developing recommendations and app framework</i>		3, 4
Week 13 15/4/2022	Latin Easter vacation		
Week 14 22/4/2022	Greek Orthodox Easter vacation		
Week 15 29/4/2022	Review of health apps presentation (work in progress)		
17/5/2022	A3) Review of apps report due		

Readings in order of appearance

* Required readings

Week 1 – What is eHealth?

- Eysenbach, G. (2001). What is e-health?. *Journal of medical Internet research*, 3(2).
- *Oh, H., Rizo, C., Enkin, M., & Jadad, A. (2005). What is eHealth (3): a systematic review of published definitions. *Journal of medical Internet research*, 7(1).
- *Shaw, T., McGregor, D., Brunner, M., Keep, M., Janssen, A., & Barnett, S. (2017). What is eHealth (6)? Development of a Conceptual Model for eHealth: Qualitative Study with Key Informants. *Journal of Medical Internet Research*, 19(10), e324.

Week 2 – eHealth definitions, research, and applications

- Ahern, D. K., Kreslake, J. M., & Phalen, J. M. (2006). What is eHealth (6): perspectives on the evolution of eHealth research. *Journal of medical Internet research*, 8(1).
- *Boogerd, E. A., Arts, T., Engelen, L. J., & van De Belt, T. H. (2015). "What is eHealth": time for an update?. *JMIR research protocols*, 4(1).
- Jones, R., Rogers, R., Roberts, J., Callaghan, L., Lindsey, L., Campbell, J., ... & Williamson, G. R. (2005). What is eHealth (5): a research agenda for eHealth through stakeholder consultation and policy context review. *Journal of medical Internet research*, 7(5).
- *Pagliari, C., Sloan, D., Gregor, P., Sullivan, F., Detmer, D., Kahan, J. P., ... & MacGillivray, S. (2005). What is eHealth (4): a scoping exercise to map the field. *Journal of medical Internet research*, 7(1).

Week 3 – eHealth and Medicine 2.0

- Eysenbach, G. (2008). Medicine 2.0: social networking, collaboration, participation, apomediation, and openness. *Journal of medical Internet research*, 10(3).
- *Van De Belt, T. H., Engelen, L. J., Berben, S. A., & Schoonhoven, L. (2010). Definition of Health 2.0 and Medicine 2.0: a systematic review. *Journal of medical Internet research*, 12(2).

Week 4 – Health Surveillance and Infodemiology

- Eysenbach, G. (2009). Infodemiology and infoveillance: framework for an emerging set of public health informatics methods to analyze search, communication and publication behavior on the Internet. *Journal of medical Internet research*, 11(1).

Week 5 – Consumer health

- *Black, A. D., Car, J., Pagliari, C., Anandan, C., Cresswell, K., Bokun, T., ... & Sheikh, A. (2011). The impact of eHealth on the quality and safety of health care: a systematic overview. *PLoS medicine*, 8(1), e1000387.
- *Townsend, A., Leese, J., Adam, P., McDonald, M., Li, L. C., Kerr, S., & Backman, C. L. (2015). eHealth, participatory medicine, and ethical care: a focus group study of patients' and health care providers' use of health-related internet information. *Journal of medical Internet research*, 17(6).
- Rolls, K., Hansen, M., Jackson, D., & Elliott, D. (2016). How health care professionals use social media to create virtual communities: An integrative review. *Journal of medical Internet research*, 18(6).
- *Swan, M. (2013). The quantified self: Fundamental disruption in big data science and biological discovery. *Big Data*, 1(2), 85-99.

Week 6 – eHealth literacy and information processing

- Norman, C. D., & Skinner, H. A. (2006). eHealth literacy: essential skills for consumer health in a networked world. *Journal of medical Internet research*, 8(2).
- *Norman, C. (2011). eHealth literacy 2.0: problems and opportunities with an evolving concept. *Journal of medical Internet research*, 13(4).
- *Eysenbach, G. (2020). How to fight an infodemic: the four pillars of infodemic management. *Journal of medical Internet research*, 22(6), e21820.

Week 7 – Health Promotion & Intervention via Social Media

- *Welch, V., Petkovic, J., Pardo, J. P., Rader, T., & Tugwell, P. (2016). Interactive social media interventions to promote health equity: an overview of reviews. *Health promotion and chronic disease prevention in Canada: research, policy and practice*, 36(4), 63.
- *El Benny, M., Kabakian-Khasholian, T., El-Jardali, F., & Bardus, M. (2021). Application of the eHealth Literacy Model in Digital Health Interventions: Scoping Review. *Journal of Medical Internet Research*, 23(6), e23473.

Examples of Health Apps Reviews

- Bardus, M., van Beurden, S. B., Smith, J. R., & Abraham, C. (2016). A review and content analysis of engagement, functionality, aesthetics, information quality, and change techniques in the most popular commercial apps for weight management. *International Journal of Behavioral Nutrition and Physical Activity*, 13(1), 35.
- Grainger, R., Townsley, H., White, B., Langlotz, T., & Taylor, W. J. (2017). Apps for People With Rheumatoid Arthritis to Monitor Their Disease Activity: A Review of Apps for Best Practice and Quality. *JMIR mHealth and uHealth*, 5(2).
- McKay, F. H., Cheng, C., Wright, A., Shill, J., Stephens, H., & Uccellini, M. (2016). Evaluating mobile phone applications for health behaviour change: A systematic review. *Journal of telemedicine and telecare*, 1357633X16673538.

Evaluating the quality of mobile apps

- Stoyanov, S. R., Hides, L., Kavanagh, D. J., Zelenko, O., Tjondronegoro, D., & Mani, M. (2015). Mobile app rating scale: a new tool for assessing the quality of health mobile apps. *JMIR mHealth and uHealth*, 3(1), e3422.
- Stoyanov, S. R., Hides, L., Kavanagh, D. J., & Wilson, H. (2016). Development and validation of the user version of the Mobile Application Rating Scale (uMARS). *JMIR mHealth and uHealth*, 4(2), e5849.
- Bardus, M., Awada, N., Ghandour, L. A., Fares, E. J., Gherbal, T., Al-Zanati, T., & Stoyanov, S. R. (2020). The Arabic version of the Mobile App Rating Scale: development and validation study. *JMIR mHealth and uHealth*, 8(3), e16956.
- *Azad-Khaneghah, P., Neubauer, N., Miguel Cruz, A., & Liu, L. (2021). Mobile health app usability and quality rating scales: a systematic review. *Disability and Rehabilitation: Assistive Technology*, 16(7), 712-721.

Resources for mobile apps design frameworks

- <https://technostacks.com/blog/mobile-app-development-frameworks>
- <https://aws.amazon.com/mobile/mobile-application-development/>
- <https://buildfire.com/mobile-app-design/>
- <https://www.cerdonis.tech/blogs/the-process-of-mobile-app-designing/>