**Virtual Reality and Digital Technology (This course will be taught in English)**
**Monday 1:10-4:00pm Da Yong Building, Room 207**

| Instructor | Jih-Hsuan Tammy Lin |
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| Office | Research Building 825 |
| Office hours | Monday after class or by email appointment (Skype meeting preferred) |
| Email | tammylin@nccu.edu.tw (preferred channel to contact) |
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*This syllabus is tentative and the instructor has rights to change throughout the semester.

**Overview**

The seminar in Virtual Reality and Digital Technology will focus on understanding the latest metaverse trends, development of virtual reality, and digital game culture in the global perspective, and understand the development of theories and research trends/topics in the literature. In addition, students will learn various important digital technology trends internationally with a native focus. Students will examine VR phenomena and their effects on human well-being, cognition, and emotions. Furthermore, we will look at how different areas employ VR and digital games as a persuasive and educational tool and identity experiment. The goals of the course are threefold: First, understand the seminal constructs in VR and digital games. In addition, be familiar with related research published in "flagship" journals including Journal of Communication, Communication Research, Human Communication Research. Mainstream journals dedicated digital games including Media Psychology, Journal of Computer Mediated Communication, New Media and Society, Cyberpsychology, Behavior, and Social Networking, and Computers in Human Behavior. Second, be able to critically analyze and interpret how scholars in these fields frame research issues and investigate the effects of these two media on human being. Third, be able to build logical and precise argument to contribute to advance the knowledge of these two fields, theoretically and empirically. All students should be able to propose a clear-designed, well-argued application analysis/research proposal at the end of the semester. For undergraduate students, the term project will be an analysis of a certain VR application and phenomenon.

**Grading**

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| Class Participation and after-class activities | 50% |
| Midterm bibliography (Due is week 12) | 10% |
| Original Research Paper/Term project | 40% |
| Extra Credit | up to 5% |

**Criteria/Requirements:**

For graduate students: Research paper is expected for graduate students as the term projects. You are welcome to do the term project individually or with a group of other students. In addition, graduate students have to prepare to the find the latest research and present it in the class for discussion. Please use lots of examples/news stories to link to the theory.

For undergraduate students: You can choose to do literature review in chosen topic or design a game (exergame, advergame, serious game, VR game) for your term project. You are welcome to do the term project individually or with a group of other students. You are expected to engage in course discussion, and try to learn to do the course leading.

**Plagiarism**

Don't do it! Copying or using the material of another author or student without clearly referencing that work is considered plagiarism and in violation of NCCU's rules of student conduct. It will result in an automatic failing grade.

- After-class activities and class participation 50%
  Class participation is based on your on-going contributions to each class meeting. You are expected to make multiple, substantive contributions during each class session. There will be random after-class activities, and students are required to submit activity reports or projects in class.

**Late assignment deducts 5 points per day.**

- Midterm bibliography 10%
  Whether you plan to write a research paper (for grad students) or design a game/VR application/or conduct in-depth research for certain issues (for undergrad), you will list relevant references for your research topic (ideally 5-10 references). I will review it and suggest seminal references if you miss them.

- Research paper/ application analysis 40%
The original research paper is expected to be of publishable quality, focusing on the theory, issue, or context of your choice. It begins with a synthesis of relevant theory and research, concludes with a set of testable hypotheses, and includes a comprehensive list of references (in APA 6$^{th}$ style), such as we might find in any peer reviewed social science journal. The purpose of this paper is to demonstrate that you understand how to apply a theory and what it means to synthesize an original research problem.

This paper will be about 10-15 pages in length (double spaced, 12 point type, 1 inch margins), exclusive of the references, and will be carefully edited into clear, concise, and grammatical language prose. Turgid, windy, and/or ungrammatical submissions will be

returned for rewrites without comment. American Psychological Association (APA) style will be followed.

**Texts and readings**
- Required:

**All texts will be PDF files which you can find on particular E-learning site.**

**This course will be hosted by both Jih-Hsuan Tammy Lin (Distinguished Professor, National ChengChi University) and Dr. Nick Bowman (Associate Professor, Texas Tech University). This course is part of the e-learning program supported by NCCU. All the content and discussion in the class will be recorded and be uploaded to the NCCU e-learning platform. All students are required to sign an agreement form to consent to be included in the videos.**

**Seminar Schedule**

| Week | Date | Required Readings |
|------|------|-------------------|
| 1 | 2/14 | **Introduction to class**： (Dr. JihHsuan Tammy Lin 林日璇)<br>Communication Technology as a field in communication<br>● Introduction of recent communication technology<br>● Cases of communication technology |
| 2 | 2/21 | **Introduction to Virtual Reality** (Taught by JihHsaun Tammy Lin 林日璇)<br>● Basic concept (Slater)<br>Slater, M. (2009). Place illusion and plausibility can lead to realistic behaviour in immersive virtual environments. *Philosophical Transactions of the Royal Society B: Biological Sciences*, *364*(1535), 3549-3557.<br>● Current trends and analysis of Metaverse |
| 3 | 2/28 | National Holiday |
| 4 | 3/7 | **VR experience:** Current application. Let's experience!<br>Meet at Room 320.<br>(By JihHsuan Tammy Lin 林日璇)<br>● Virtual reality Content and design<br>● Virtual reality headset introduction |
| 4 | 3/14 | ● **Interactivity as demand** (by Dr. Nick Bowman, Online Session 1)<br>● Defining enjoyment and mood management as intrinsic needs |

| 5 | 3/21 | **Virtual reality: VR journalism** (what are the foundational concepts and characteristics in VR, and how do VR journalism presents itself) |
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| | | ● De la Peña, N., Weil, P., Llobera, J., Giannopoulos, E., Pomés, A., Spanlang, B., ... & Slater, M. (2010). Immersive journalism: immersive virtual reality for the first-person experience of news. *Presence: Teleoperators and Virtual Environments*, *19*(4), 291-301. |
| | | ● Sundar, S. S., Kang, J., & Oprean, D. (2017). Being there in the midst of the story: How immersive journalism affects our perceptions and cognitions. *Cyberpsychology, Behavior, and Social Networking*, *20*(11), 672-682. |
| | | (by Dr. Jih-Hsuan Tammy Lin 林日璇) |
| | | <span style="color:red">Group 1 present: practical case of VR journalism</span> |
| 6 | 3/28 | ● **Presence,** narrative engagement, and sense of place (how players feel "wrapped up" and connected to digital spaces and narratives) (Dr. Nick Bowman, online session 2) |
| | | ● Immersive journalism research |
| 7 | 4/4 | National Holiday |
| 8 | 4/11 | Virtual reality and more serious and industry application Demonstration |
| | | ● VR glasses by HTC |
| | | ● Let's have the class in virtual reality! |
| | | ● Industry application using virtual reality 宏匯廣場 |
| | | (by Dr. JihHsuan Tammy Lin 林日璇) |
| 8 | 4/18 | **Virtual reality in games and persuasion (identification)—** (psychological mechanism in VR games and how we can use VR for information persuasion and social issue awareness/involvement) (by Dr. Jih-Hsuan Tammy Lin 林日璇) |
| | | ● Lin, J.-H.*;Wu, D.-Y.;Tao, C.-C., (2018), 'So scary, yet so fun: the role of self-efficacy in enjoyment of a virtual reality horror game, ' New Media and Society, 20, 3223-3242. |
| | | ● Lin, J.-H.*, 2017.07, 'Fear in Virtual Reality (VR): Fear elements, coping reactions, immediate and next-day fright responses toward a survival horror zombie virtual reality game, ' Computers in Human Behavior, Vol.72, pp.350-361.(SSCI) |
| | | ● Ahn, S. J. G., Bostick, J., Ogle, E., Nowak, K. L., McGillicuddy, K. T., & Bailenson, J. N. (2016). Experiencing nature: Embodying animals in |

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| | | immersive virtual environments increases inclusion of nature in self and involvement with nature. *Journal of Computer-Mediated Communication*, *21*(6), 399-419.<br><br>Group 2 presents: new literature and new application |
| **9** | **4/25** | **Social interaction in virtual world and new economy, Yvette Wohn Underlying mechanism:** character identification, player and avatars, embodiment, self-concept (By Dr. Jih-HsuanTammy Lin 林日璇) |
| **10** | **5/2** | ● Progressive embodiment and natural mapping (a discussion of video game controllers and interfaces, and how players understand and engage them)<br><br>(By Dr. Nick Bowman, online session 3) |
| **11** | **4/25** | • Moral panics (a historical account of widespread social fears around video games and their effects)<br><br>(By Dr. Nick Bowman, online session 4) |
| **12** | **5/2** | • Designing games and VR for learning—Guest speech<br>(By Dr. Yu-Hao Lee, from Florida State University) |
| **13** | **5/9** | • Transformative Digital Narratives/Disorienting Dilemma;<br>By Dr. Nick Bowman, online session 5 |
| **14** | **5/16** | • Advergames and Newsgames (will feature related projects and research regarding using games for advertising persuasion and using games as news media) By Dr. Jih-Hsuan Tammy Lin 林日璇<br>van Reijmersdal, E. A., Rozendaal, E., & Buijzen, M. (2012). Effects of prominence, involvement, and persuasion knowledge on children's cognitive and affective responses to advergames.<br>Ahn, S. J., Hahm, J. M., & Johnsen, K. (2018). Feeling the weight of calories: using haptic feedback as virtual exemplars to promote risk perception among young females on unhealthy snack choices. *Media Psychology*, 1-27.<br>Peng, W., Lin, J. H., Pfeiffer, K., & Winn, B. (2012). Need satisfaction supportive game features as motivational determinants: An experimental study of a self-determination theory guided exergame. *Media Psychology, 15*, 175-196.<br>Group 3 presents new literature and new VR marketing cases |
| **15** | **5/23** | • Social Robotics<br>By Dr. Nick Bowman, online session 6 |
| **16** | **5/30** | • Media psychology and communication technology Q& A |

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| | | By Dr. Nick Bowman |
| **17** | **6/6** | Final paper consulting meet in classroom and online-<br>修課學生實體晤談/網路修課生網路晤談 (individual/ groups) |
| **18** | **6/13** | Final paper sharing/digital interaction (實體與網路) |

**Resources**

Games for health, http://www.gamesforhealth.org

Games for change, http://www.gamesforchange.org

Gamification: http://www.gamification.co/blog/

Health Games Research, http://www.healthgamesresearch.org/database

Lumosity (brain games): http://www.lumosity.com/

Newsgaming: http://www.newsgaming.com/

Persuasive games, http://www.persuasivegames.com

Persuasive Technology Lab, http://captology.stanford.edu

Serious game initiative, http://www.seriousgames.org/index2.html

Serious games summit, http://www.seriousgamessummit.com/

Water cooler games, http://www.watercoolergames.org

Pokemon Go! https://docs.google.com/document/d/1xYuozfkON-RVZQkr7d1qLPJrCRqN8TkzeDySM-3pzeA/mobilebasic?pli=1