

**MMPH6206 Emerging infectious diseases and "one health"**

**Coordinator: Prof JSM Peiris/ Prof HL Yen**

**Course Description:**

Emerging infectious diseases continue to pose major threats to global public health, SARS, MERS, pandemic influenza, Ebola and Zika being recent examples. Many of these emerge through inter-species transmission from animals. The factors that contribute to emergence of such diseases and of other zoonotic diseases include environmental, ecological, societal, microbial and host factors. A "One Health" approach that envisions an integrated approach to enhancing the health of humans, animals and the environment is a paradigm relevant to responding emerging infections. This interactive course is designed for postgraduate students who are interested in understanding the factors that contribute to infectious disease emergence, their prevention, and control.

**Prerequisite:** None

**Term 2 (Thursday)**

**Contact person:** Dr Pavithra Daulagala

Date	Time	Topic	Lecturer	Format	Venue
09 Jan 2025	6:30 – 9:00 pm	1. Outbreak investigations	Prof HL Yen	Lecture	TBC
16 Jan 2025	6:30 – 9:00 pm	2. Emerging infectious diseases and the One Health approach	Prof JSM Peiris	Lecture	TBC
23 Jan 2025	6:30 – 9:00 pm	3. From SARS to MERS and SARS-CoV-2	Prof JSM Peiris	Lecture/ Discussion	TBC
13 Feb 2025	6:30 – 9:00 pm	4. Pandemic and zoonotic influenza	Prof HL Yen	Lecture/ Discussion	TBC
20 Feb 2025	6:30 – 9:00 pm	5. Vector-borne diseases	Prof JSM Peiris	Lecture/ Discussion	TBC
27 Feb 2025	6:30 – 9:00 pm	6. Hendra and Nipah viruses, emerging threats?	Prof LLM Poon	Lecture/ Discussion	TBC
06 Mar 2025	6:30 – 9:00 pm	7. Food Safety and One Health	Prof HL Yen	Lecture/ Discussion	TBC
13 Mar 2025	6:30 – 9:00 pm	8. Ebola and other viral hemorrhagic fevers	Prof JSM Peiris	Lecture/ Discussion	TBC
20 Mar 2025	6:30 – 9:00 pm	9. A case study of an emerging infectious disease outbreak (Part 1)	Prof JSM Peiris/ Prof HL Yen	Discussion	TBC
27 Mar 2025	6:30 – 9:00 pm	10. A case study of an emerging infectious disease outbreak (Part 2)	Prof JSM Peiris/ Prof HL Yen	Discussion	TBC
03 Apr 2025	6:30 – 9:00 pm	11. Disease eradication	Prof HL Yen	Lecture/ Discussion	TBC
10 Apr 2025	6:30 – 8:30 pm	12. Interspecies transmission: crossing the species barrier	Prof HL Yen	Lecture	TBC
17 Apr 2025	2:00 – 4:00 pm	13. Class test	-	-	TBC

**Course Assessment:** Continuous in course assessment (100%), including in course discussions 35% (15% from pre-discussion MCQ and 20% from discussions), case study Part I (10%), case study Part 2 (10%), and class test (45%).

- Recommended readings:**
1. LA Beltz, (2011) Emerging Infectious Diseases. John Wiley & Sons Ltd.
  2. DM Morens and AS Fauci, (2020) Emerging Pandemic Diseases: How We Got to COVID-19. Cell 182:1077-1092.
  3. Keusch GT, Amuasi JH, Anderson DE, Daszak P, Eckerle I, Field H, Koopmans M, Lam SK, Das Neves CG, Peiris M, Perlman S, Wacharapluesadee S, Yadana S, Saif L. Pandemic origins and a One Health approach to preparedness and prevention: Solutions based on SARS-CoV-2 and other RNA viruses. Proc Natl Acad Sci U S A. 2022 Oct 18;119(42):e2202871119.
  4. Bernstein AS, Ando AW, Loch-Temzelides T, Vale MM, Li BV, Li H, Busch J, Chapman CA, Kinnaird M, Nowak K, Castro MC, Zambrana-Torrel C, Ahumada JA, Xiao L, Roehrdanz P, Kaufman L, Hannah L, Daszak P, Pimm SL, Dobson AP. The costs and benefits of primary prevention of zoonotic pandemics. Sci Adv. 2022 Feb 4;8(5):eabl4183.
  5. Lefrançois T, Malvy D, Atlani-Duault L, Benamouzig D, Druais PL, Yazdanpanah Y, Delfraissy JF, Lina B.



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After 2 years of the COVID-19 pandemic, translating One Health into action is urgent. *Lancet*. 2022 Oct 21:S0140-6736(22)01840-2.

6. Berthe, Franck Cesar Jean; Bali, Sulzhan Rameshwari; Batmanian, Garo J. *Putting Pandemics Behind Us : Investing in One Health to Reduce Risks of Emerging Infectious Diseases (English)*. Washington, D.C. : World Bank Group.  
<http://documents.worldbank.org/curated/en/099530010212241754/P17840200ca7ff098091b7014001a08952e>

Contact person: Dr Pavithra Daulagala – email: [pavi@hku.hk](mailto:pavi@hku.hk), Tel: 3917 7541