

# CƠ SỞ DI TRUYỀN HỌC BIỂU SINH

(INTRODUCTION TO EPIGENETICS)  
March 1<sup>st</sup> to May 31<sup>st</sup> 2025

Phuc Loi Luu, PhD

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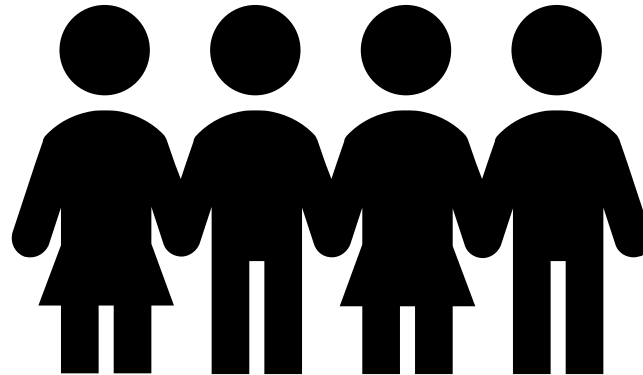
# Content

- Class member introduction
- Curriculum of Epigenetics 2025
- Projects and important dates
- Evaluation for the course
- How Epigenetics 2025 lecture work?
- Linux OS, Google Colab, Linux Command Lines and github

# Class member introduction

Bạn phê  
không?

Phê! Cảm  
ơn bạn. Còn  
bạn?



## PHUC-LOI LUU, PhD



### Head of Scientific Research Office

#### Current Affiliation

Institute for Applied Research in Health Sciences and Aging  
(ARiHA) - Thong Nhat Hospital  
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#### Cơ quan

Viện Nghiên cứu Ứng dụng Khoa học Sức khỏe và Lão hóa  
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#### Webpage

<https://scholar.google.com.au/citations?user=KPIqpJsAAAAJ&hl=en>

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## EDUCATION AND PROFESSION

2023 – 2024	<b>Tam Anh Research Institute (TAMRI)</b>	<i>Head of Data Science Division</i>	Ho Chi Minh City, Vietnam
2022 – 2023	<b>Zymo Research</b>	<i>Bioinformatic Group Leader</i>	Ho Chi Minh City, Vietnam
2014 – 2022	<b>Garvan Institute of Medical Research,</b> UNSW Sydney	<i>Bioinformatics researcher in Computational Cancer Genomics and Epigenomics under the supervision of Prof. Susan Clark</i> <i>Conjoint Senior Lecturer</i>	Sydney, Australia
2011 - 2014	<b>Max Planck Institute for Molecular Biomedicine,</b> University of Muenster	<i>PhD student in stem cell computational biology under the supervision of Prof. Hans R. Schöler</i>	Muenster, Germany
2010 – 2011	<b>KIST–Europe</b>	<i>Data Scientist</i>	Saarbruecken, Germany
2008 – 2010	<b>Max Planck Institute for Informatics,</b> University of Saarland	<i>Bioinformatics Post-graduate student under the supervision of Prof. Thomas Langauer</i>	Saarbruecken, Germany
2005 – 2008	<b>Nong Lam University</b> - Ho Chi Minh City	<i>Lecturer</i>	Ho Chi Minh City, Vietnam
2000 – 2005	<b>University of Science</b> - Ho Chi Minh City National University	<i>Bioinformatics undergraduate student under the supervision of Prof. Ho Huynh Thuy Duong</i>	Ho Chi Minh City, Vietnam

# Curriculum of Epigenetics 2025

[00.0 Introduction to the course "Epigenetics 2025" \[Loi\] - 01/3/2025](#)

[00.1 Epigenetics, Epigenomics and its applications \[Loi\] - 01/3/2025](#)

[01.0 Introduction and overview of Epigenetics \[Loi\] - 08/3/2025](#)

[01.1 Basic Bash script and Awk \[Hung/Thanh/Kim\] - 08/3/2025](#)

[02.0 Chromatin based epigenetic control I \[Loi\] - 15/3/2025](#)

[02.1 Basic programing with R \[Hung/Thanh/Kim\] - 15/3/2025](#)

[03.0 Chromatin based epigenetic control II \[Loi\] - 22/3/2025](#)

[03.1 Statistical analysis with R \[Hung/Thanh/Kim\] - 22/3/2025](#)

[04.0 Histone modifications, TFBSs, DNase-seq Hypersensitivity and ATAC-seq analysis \[Loi\] - 29/3/2025](#)

[04.1 Hands-on: DeepTools, featureCounts and DESeq2 \[Tam/Minh\] - 29/3/2025](#)

[05.0 DNA-methylation and epigenetic control \[Loi\] - 05/4/2025](#)

[05.1 Data visualization with R \[Hung/Thanh/Kim\] - 05/4/2025](#)

[06.0 DNA methylation analysis with DMRcate \[Thien/Hoang\] - 12/4/2025](#)

[06.1 DNA methylation visualization with IGV \[Hung/Thanh/Kim\] - 12/4/2025](#)

# Curriculum of Epigenetics 2025

[07.0 Non-coding long and small RNAs in epigenetic control \[Loi\] - 19/4/2025](#)

[07.1 Visualizing epigenomics with UCSC Genome Browser \[Hung/Thanh/Kim\] - 19/4/2025](#)

[08.0 Mechanisms of epigenetic control during development \[Loi\] - 26/4/2025](#)

[08.1 Mining Gene expression GTEX, Epigenome Roadmap and ENCODE \[Hung/Thanh/Kim\] - 26/4/2025](#)

[09 Mechanisms of epigenetic control in plant I \[Nguyen\] - 03/5/2025](#)

[10 Mechanisms of epigenetic control in plant II \[Nguyen\] - 10/5/2025](#)

[11.0 Epigenetics and human disease development \[Loi\] - 17/5/2025](#)

[11.1 Mining BLUEPRINT and TCGA database \[Minh\] - 17/5/2025](#)

[12.0 Epigenetic Biomarkers and epigenetic therapy \[Loi\] - 24/5/2025](#)

[12.1 Course Review \[Loi\] - 24/5/2025](#)

[13.0 Group project Presenting \(31 May 2025\) - 31/5/2025](#)

# Projects and important dates (31 May 2025)

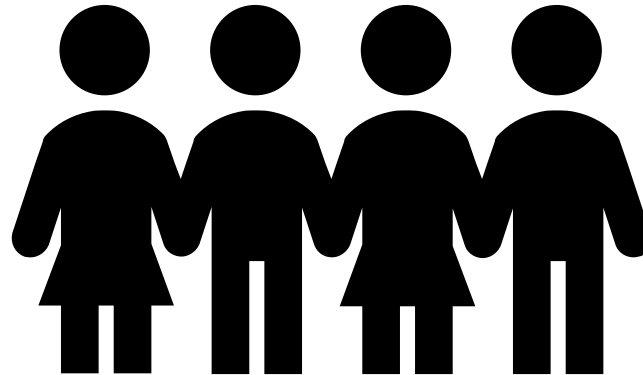
No	Project	Aim	Requirement	Group
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Do we need to install and learn Ubuntu and programming?

Không học  
Ubuntu và lập  
trình được  
không?

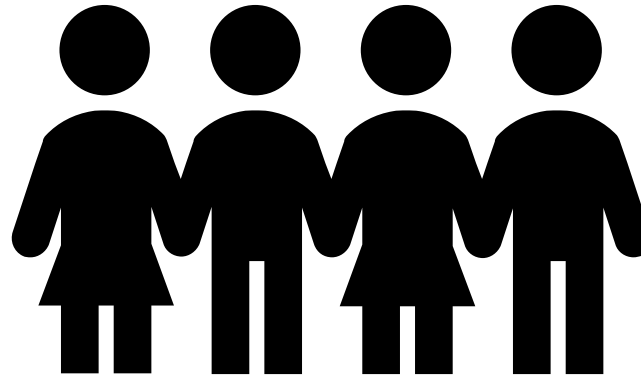
Được nhe!



Do we need to install and learn Ubuntu and programming?

Không học  
Ubuntu và lập  
trình được  
không?

Được, nhưng  
như có chân mà  
ngồi xe lăn!



# Evaluation for the course

- Presentation date (final exam): **31 May 2025**
- Max 30 min each group
- 5-10 questions each student
- Report (20) +
  - Presentation (20) +
    - Slide (10) +
      - Questions for the presentation (25) +
        - Questions for the all of lectures (25)

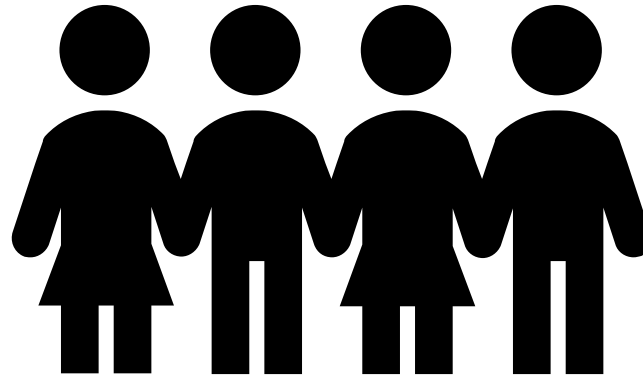
# How does my lecture work?

- Start at 8:00 AM every Saturday from **01 March 2025** to **31 May 2025** (14 weeks)
- 15 min oral test at the begin of the lecture
- Time breaks in a lecture (30 min)
- Lecture end at **11 AM**
- No attendance checking

# No attendance checking

Nghỉ học  
được không  
bạn?

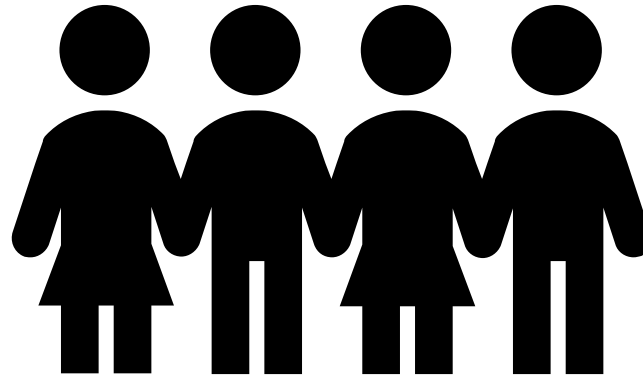
Được nhé!




# No attendance checking



Nghỉ học  
được không  
bạn?




Nhưng khó  
đậu nhe!





# https://github.com/luuloi/Epigenetics\_2025/


 **Epigenetics\_2025** Public







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 **luuloi** Update README.md

e778b7a · 2 minutes ago  17 Commits

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 Lecture_03	Create notes.txt	1 hour ago
 Lecture_04	Create notes.txt	1 hour ago
 README.md	Update README.md	2 minutes ago

 **README** 

## Epigenetics 2025

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[00.0 Introduction to the course "Epigenetics 2025" \[Loi\] - 01/3/2025](#)

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Kênh chia sẻ kiến thức Giải Phẫu bệnh hiện đại, Tin sinh học và Khoa học Y sinh. Bao gồm các bài giảng về:

- Chuyên ngành Giải Phẫu bệnh cơ bản, chuyên sâu
- Các chuyên ngành y khoa và Khoa học Y sinh khác
- Kỹ thuật labo (giải phẫu bệnh, sinh học tế bào và phân tử)
- Xử lý và phân tích dữ liệu giải trình tự thông lượng cao (DNA-seq, RNA-seq, ATAC-seq, etc.)
- Khoa học dữ liệu khác: Data Visualization, Machine Learning
- Điểm báo (journal club): đọc và review các bài báo khoa học y sinh

Advanced VnPathoinformatics  
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JCS 2022 60 videos

Data Visualization 2022 40 videos

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# Thank you for your attention!

