Advanced STEM Students

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Tóm tắt nội dung

This text is a part of the series Some Topics in Advanced STEM & Beyond:

URL: https://nqbh.github.io/advanced_STEM/.

Latest version:

• Advanced STEM Students.

PDF: URL: https://github.com/NQBH/advanced_STEM_beyond/blob/main/teach/student/NQBH_student.pdf.

TEX: URL: https://github.com/NQBH/advanced_STEM_beyond/blob/main/teach/student/NQBH_student.tex.

PDF: URL: .pdf. TEX: URL: .tex.

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1 UMT Summer Semester 2025/1480: Introduction to Mathematical Analysis

- 1. TRẦN THANH CƯỜNG.
 - Absence: -2.
 - Early attendance: 0.5 + 0.5.
 - Bonus:
- 2. HUỳNH LÂM VŨ ĐÌNH.
 - Early attendance: 0.5 + 0.5 + 0.5.
 - Bonus:
- 3. Trương Công Hoan.
 - Early attendance: 0.5 + 0.5 + 0.5.
 - Bonus:
- 4. Nguyễn Huy Hoàng [NHH].

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- Early attendance: 0.5 + 0.5 + 0.5.
- Bonus: 0.25 + 0.5 + 0.5 + 1 + 2 (count rooms) + 2 (build roads) + 2 (labyrinth).
- 5. Lữ Minh Hoàng.
 - Absence: -2.
 - Early attendance: 0.5.
 - Bonus:
- 6. Hà Quang Huy.
 - Early attendance: 0.5 + 0.5.
 - Bonus:
- 7. Nguyễn Bảo Khánh.
 - Early attendance: 0.5 + 0.5 + 0.5.
 - Bonus: 1 + 2 + 1 + 0.5.
- 8. Nguyễn Lê Đăng Khoa [NLDK].
 - Early attendance: 0.5 + 0.5 + 0.5.
 - Bonus: 0.5 + 0.5 + 0.5 + 0.5 + 0.5 + 0.5 (gift) + 1.5 + 0.25 + 0.5 (doubles) + 0.5 (prime) + 0.5 (houseboat) + 1 (red black) + 1 (count rooms) + 1 (dice) + 1 (min coin) + 1 (coin combination I) + 1 (grid path I) + 1.5 (book shop) + 1 (exp I).
- 9. Phan Gia Lạc [PGL].
 - Early attendance: 0.5 + 0.5 + 0.5.
 - Bonus: 0.5 + 0.25 + 0.25 + 0.5 (doubles) + 0.5 (houseboat) + 0.5 (prime) + 1 (count room) + 1 (min coin).
- 10. Phan Phương Phi [PPP].
 - Early attendance: 0.5 + 0.5 + 0.5.
 - Bonus: 1 + 0.5 + 1 + 0.5 + 0.5 (prime) + 1 (count rooms) + 1 (dice) + 1 (coin) + 1 (coin combination I).
- 11. Đặng Minh Phương.
 - Early attendance: 0.5 + 0.5.
 - Absence: -2.
 - Bonus:
- 12. Nguyễn Hoàng Quân.
 - Early attendance: 0.5 + 0.5 + 0.5.
 - Bonus:
- 13. Đường Nguyễn Minh Sơn.
 - Early attendance: 0.5 + 0.5 + 0.5.
 - Bonus:
- 14. Hấu Trung Thành.
 - Absence: -2 2.
 - Early attendance: 0.5.
- 15. Tạ Minh Thiện.
 - Early attendance: 0.5 + 0.5 + 0.5.
 - Bonus:
- 16. Lê Nguyễn Quốc Toàn.
 - Early attendance: 0.5 + 0.5 + 0.5.
 - Bonus:
- 17. Nguyễn Hoàng Ngọc Trân.

- Absence: -2 2 2.
- Bonus:
- 18. Nguyễn Anh Tuyển.
 - Early attendance: 0.5 + 0.5 + 0.5.
 - Bonus:
- 19. Nguyễn Như Ý.
 - Early attendance: 0.5 + 0.5 + 0.5.
 - Bonus: 1.

1.1 Potential topics for midterm exam

1. Cho dãy số $\{u_n\}_{n=1}^{\infty}$. Cho vài giá trị cụ thể của ε , tính N_{ε} .

2 UMT Summer Semester 2025/1481: Introduction to Mathematical Analysis

- 1. LÊ MINH TRÂM ANH.
 - Early attendance: 0.75 + 0.75 + 0.75.
 - Bonus:
- 2. Nguyễn Bảo Anh.
 - Early attendance: 0.75 + 0.75.
 - Late: 5 mins.
- 3. Cao Gia Bảo.
 - Absence: -2.
 - Early attendance: 0.75 + 0.75 + 0.75.
- 4. Vũ Văn Đạt.
 - Absence: -2.
 - Early attendance: 0.75 + 0.75 + 0.75.
 - Bonus: 1 + 0.5.
- 5. TRẦN VĂN HÂU.
 - Absence: -2.
 - Early attXuendance: 0.75 + 0.75 + 0.75.
 - Bonus: 1.
- 6. Nguyễn Ngọc Bích Hiền.
 - Early attendance: 0.75 + 0.75 + 0.75 + 0.75.
 - Bonus: 0.25 + 1 + 1 + 2 + 1.
- 7. Nguyễn Văn Hiếu.
 - Early attendance: 0.75 + 0.75 + 0.75.
- 8. Dương Xuân Hưng [DXH].
 - Early attendance: 0.75 + 0.75 + 0.75.
 - Bonus: 1 + 1 + 1 (gift) + 1 (picture) + 2 (count rooms) + 2.5 (coin combination I) + 2 (coin combination II) + 3 (array description).
- 9. Trần Lê Gia Huy.
 - Early attendance: 0.75 + 0.75 + 0.75.
- 10. TRẦN QUANG HUY.
 - Absence: -2.

- Early attendance: 0.75 + 0.75.
- 11. Đặng Phúc An Khang [DPAK].
 - Early attendance: 0.75 + 0.75.
 - Late: 15 + 52 mins.
 - Bonus: 0.5 + 0.5 + 0.5 + 0.5 + 0.5 + 0.5 + 0.5 + 0.5 + 0.5 + 1 + 0.5 (virus) + 0.5 (gift) + 0.5 (game) + 0.25 (financial management) + 0.5 + 0.5 (prime) + 1 (red black) + 1 + 1 (x^a) + 1 (count room) + 1 (build road) + 1 (dice combination) + 1 (minimizing coin) + 1 (coin combination I) + 1 (coin combination II) + 1.5 (remove digit) + 1 (grid path I) + 1 (book shop) + 1 (exp I).
- 12. Lương Quốc Khánh.
 - Early attendance: 0.75 + 0.75 + 0.75.
 - Bonus: 1 + 1 + 1 + 1.
- 13. Nguyễn Hà Đăng Khoa.
 - Early attendance: 0.75 + 0.75 + 0.75.
 - Bonus: 1.
- 14. Nguyễn Huy Đăng Khoa.
 - Absence: -1.
 - Early attendance: 0.75.
- 15. HUỳNH Đỗ ĐĂNG KHOA.
 - Late: 23 + 25 mins. ***
 - Early attendance: 0.75.
- 16. TRẦN TRUNG KIÊN.
 - Early attendance: 0.75 + 0.75 + 0.75.
- 17. Nguyễn Huỳnh Chí Lâm.
 - Early attendance: 0.75 + 0.75 + 0.75.
 - Bonus: 1 + 0.75 + 1 + 1.
- 18. Lê Hoàng Linh.
 - Early attendance: 0.75 + 0.75 + 0.75.
 - Bonus: 1 + 1.
- 19. Lâm Bảo Ngọc.
 - Absence: -1.
 - Early attendance: 0.75 + 0.75 + 0.75.
 - Bonus: 0.25.
- 20. Nguyễn Lương Nghĩa.
 - Early attendance: 0.75 + 0.75 + 0.75 + 0.75.
 - Bonus: 0.5 + 1 + 1 + 3 + 1.5 + 1.5.
- 21. TRẦN PHÚC NGUYÊN.
 - Early attendance: 0.75 + 0.75 + 0.75 + 0.75.
- 22. Bùi Văn Nhớ.
 - Early attendance: 0.75 + 0.75 + 0.75.
 - Late: 40 mins.
 - Bonus: 1 + 1 + 1 + 1 + 3 + 0.75.
- 23. Lê Thanh Tân.
 - Absence: -1.

- Early attendance: 0.75.
- Late: 5 mins.
- 24. Huỳnh Thị Kiều Thu.
 - Early attendance: 0.75 + 0.75 + 0.75 + 0.75.
 - Bonus: 1 + 1 + 1.
- 25. Hoàng Nghĩa Tín.
 - Early attendance: 0.75 + 0.75 + 0.75.
- 26. Hoàng Anh Tuấn.
 - Absence: -2.
 - Early attendance: 0.75 + 0.75 + 0.75.
- 27. Ngô Thanh Tùng.
 - Absence: -2 2.
 - Late: 29 mins.
- 28. Ngô Hoàng Tùng [NHT].
 - Early attendance: 0.75 + 0.75 + 0.75.
 - Bonus: 0.5 + 0.5 + 0.5 + 0.5 + 0.5 + 1.5 + 0.5 + 0.5 (virus) + 0.5 (virus) + 0.5 (gift) + 0.5 (game) + 1 + 1 (count rooms) + 1 (labyrinth) + 1 (build roads) + 1 (dice) + 1 (min coin) + 1 (coin combination I) + 1 (coin combination II) + 1 (remove digit) + 1 (grid path) + 1.5 (array description) + 1 (book shop) + 1.5 (count towers) + 1.5 (edit distance) + 1 (exponentiation I).
- 29. TRẦN MỘNG TUYỀN.
 - Early attendance: 0.75 + 0.75 + 0.75.
- 30. Nguyễn Quang Vỹ.
 - Absence: -1.
 - Early attendance: 0.75 + 0.75.
 - Bonus: 1.5 + 4 + 1 + 1.5.

3 UMT Summer Semester 2025/1387: Combinatorics & Graph Theory

- 1. VÕ NGỌC TRÂM ANH [VNTA].
 - Early attendance: 0.25 + 0.5 + 0.25 + 0.5 + 0.25 + 0.5 + 0.25.
 - Bonus: 0.75 + 1 + 2 + 1.5 + 0.5 + 0.5 + 0.5 (Fibonacci + Lucas) + 0.5 (virus) + 2.5 (gen func) + 2.5 (prime) + 2.5
- 2. Hoàng Anh.
 - Early attendance: 0.25 + 0.25 + 0.5 + 0.25 + 0.5 + 0.25.
 - Bonus: 1.5 + 1 + 0.5 + 1.5.
- 3. VÕ HUỲNH THÁI BẢO.
 - Early attendance: 0.25 + 0.25 + 0.5 + 0.25 + 0.5 + 0.25.
 - Late: 7 mins.
 - Bonus:
- 4. TRẦN MẠNH ĐứC.
 - Early attendance: 0.25 + 0.5 + 0.25 + 0.25 + 0.25.
 - Bonus: 1.5 + 1 + 1.5.
 - Late: 18 + 7 mins.

- 5. Nguyễn Trung Hậu.
 - Absence: -2 2 2.
 - Early attendance: 0.25 + 0.25.
 - Bonus:
 - Late: 24 mins.
- 6. Pham Phước Minh Hiếu.
 - Early attendance: 0.25 + 0.5 + 0.25 + 0.5 + 0.25 + 0.5 + 0.25.
 - Bonus: 1.

Chấm report Hiếu week 1: B2 Catalan mã O+1 bạn hiểu sai đề: đề kêu chứng minh số cách đặt n dấu (&) đúng là số Catalan C_n , hông phải tính số Catalan số 4 nên +0. bài m số 0 & n-m số 1, làm cách khác tui +1. Prob. 4 CM $|2^[n]| = 2^n$: +1. Prob. 5: dùng nguyên lý bao hàm-loại trừ chưa chặt chẽ, bài đó cần lý luận nhiều & khó hơn: +0.25. Prob. 6: +1. Prob. 1: +1. Prob. 2: +1.

Ex1.cpp: +0.5, Ex3: +0.5, Ex5.cpp: +1, Ex6.cpp: +1. Ex7.cpp: +1, Ex8.cpp & Ex9.cpp: +0 (bài toán khó hơn thế vì có thể có nhiều bộ điểm thẳng hàng nên việc mô tả cấu trúc hình học là phần khó chính)

- 7. Hoàng Quang Huy.
 - Early attendance: 0.25 + 0.5 + 0.25 + 0.5 + 0.25 + 0.5 + 0.25.
 - Bonus: 2 + 1.5.
- 8. Phan Nguyễn Duy Kha.
 - Early attendance: 0.25 + 0.5 + 0.25 + 0.25 + 0.25.
 - Bonus: 1.5 + 1 + 1 + 1 + 1.5 + 1.5.
 - Late:
- 9. Đặng Phúc An Khang.
 - Bonus: 0.5 + 1 + 1.
- 10. Phạm Minh Khoa.
 - Absence: -2.
 - Early attendance: 0.25 + 0.5 + 0.25 + 0.5 + 0.25.
 - Bonus:
 - Late:
- 11. TRẦN THÀNH LƠI.
 - Absence: -2 2 2.
 - Early attendance: 0.25 + 0.25.
 - Bonus:
 - Late: 23 mins.
- 12. LÊ ĐứC LONG.
 - Early attendance: 0.25 + 0.25 + 0.5 + 0.25 + 0.5 + 0.25.
 - Bonus: 1 + 0.5 + 1 + 1.
- 13. LÊ CÔNG HOÀNG PHÚC.
 - Early attendance: 0.25 + 0.5 + 0.25 + 0.25 + 0.25.
 - Bonus:
 - Late: 24 + 3 mins.
- 14. Huỳnh Nhật Quang.
 - Absence: -2.
 - Early attendance: 0.25.
 - Late: 10 + 20 + 20 mins.
 - Bonus:

- 15. Cao Sỹ Siêu.
 - Early attendance: 0.25 + 0.5 + 0.25 + 0.5 + 0.25 + 0.5 + 0.25.
 - Bonus: 1 + 1.
- 16. Sơn Tân [ST].
 - Early attendance: 0.25 + 0.5 + 0.25 + 0.5 + 0.25 + 0.5 + 0.25.
 - Bonus: 1 + 1 + 1.5.

Chấm report Sơn Tân: 0.25 (a) + 0.25 (b) + 0.25 (c) + 0.25 (e) + 0.25 (g, ghi sai mũ) + 0.25 (h) + 1.5 (Pascal, làm được cho $(sum_{i=1}^{m}a_{i})^{n}$ nhiều điểm hơn) + 2 (tính C_{n}^{k}).

- 17. NGUYỄN NGỌC THẠCH.
 - Early attendance: 0.25 + 0.25 + 0.5 + 0.25.
 - Bonus: 3 + 1 + 1 + 1.5 + 2 (Catalan) + 5 (Euler candy) + 2.5 (induction) + 1 (toss coin) + 1 (dice roll) + 1 + 1 + 2 (combinator identity) + 1.5 (dollar) + 0.5 + 2.5 + 1.5 + 1 + 1 + 1 + 1.5 + 1.
 - Late: 5 + 23 mins.
- 18. Phan Vĩnh Tiến [PVT].
 - Late: 8 + 25 + 16 mins.
 - Early attendance: 0.25 + 0.5 + 0.25.
 - Bonus: 2 + 0.5 (virus) + 1 + 2 (binomial) + 1 (exp I).

3.1 Potential topics for midterm- & final exams

- Chứng minh bằng phương pháp quy nạp toán học.
- Bài toán chia keo Euler.
- Khai triển nhị thức Newton.
- Sử dụng định lý Euler & thuật toán Havel-Hakimi để chạy tay kiểm tra 1 dãy có phải là graphical sequence hay không. Vẽ đồ thị minh họa.
- Hàm sinh.
- Chạy tay thuật toán Dijkstra.
- Shortest path problem on graph Bài toán đường đi ngắn nhất.

4 UMT Summer Semester 2025/1488: Introduction to AI

- 1. Hồ Lê Duy.
 - Absence: -2.
 - Early attendance: 0.5 + 0.5 + 0.5.
- 2. Trương Công Hoan.
 - Early attendance: 0.5 + 0.5 + 0.5 + 0.5.
- 3. Lữ Minh Hoàng.
 - Early attendance: 0.5 + 0.5 + 0.5 + 0.5.
- 4. DINH KIM HUNG.
 - Early attendance: 0.5 + 0.5 + 0.5 + 0.5.
 - Bonus: 3.
- 5. HUỳNH VÕ QUỐC KHÁNH.
 - Absence: -2 2.
 - Early attendance: 0.5 + 0.5.
- 6. Nguyễn Nhật Khôi.

- Absence: -2.
- Early attendance: 0.5 + 0.5.
- 7. VÒNG LY NÀM PHÚC VLNP.
 - Early attendance: 0.5 + 0.5 + 0.5 + 0.5.
 - Bonus: 1.5 + 2 (extended scheduling).
- 8. Hầu Trung Thành.
 - Absence: -2 2.
 - Early attendance: 0.5.
 - Late: 5 mins.
- 9. Nguyễn Thi.
 - Absence: -2 2 2 2.
- 10. Đặng Nguyễn Duy Trường.
 - Early attendance: 0.5 + 0.5 + 0.5 + 0.5.

5 UMT Summer Semester 2025/1493: Information Technology Fundamentals 2

- 1. Cao Nguyễn Gia An.
 - Early attendence: 0.5 + 0.5 + 0.5.
 - Bonus: 3.5 + 2 + 2 + 2.5 + 2.5 + 1 + 1.5 + 1 + 1 + 1.5 + 2.5.
- 2. Hoàng Trâm Anh.
 - Early attendence: 0.5 + 0.5 + 0.5.
 - Bonus: 1 + 2 + 2 + 2.5 + 1.5 + 0.5.
- 3. Bùi Nguyên Minh Dũng.
 - Early attendence: 0.5 + 0.5 + 0.5.
 - Bonus: 2.5 + 2 + 2 + 2.5 + 2.5 + 1 + 1.5.
- 4. Nguyễn Ngọc Hân.
 - Early attendence: 0.5 + 0.5 + 0.5.
 - Bonus: 0.5 + 1 + 1.5 + 0.5 + 1 + 1 + 1.5.
- 5. Nguyễn Thành Thái Hiệp.
 - Early attendence: 0.5 + 0.5 + 0.5.
 - Bonus: 3 + 2 + 2 + 2.5 + 2.5 + 1 + 1.5 + 0.5 + 1 + 1.5.
- 6. Vũ Nguyễn Yến Hoa.
 - Early attendence: 0.5 + 0.5 + 0.5.
 - Bonus: 1 + 2 + 2.5 + 1 + 1.5 + 0.5.
- 7. Đỗ Huy Hoàng.
 - Early attendence: 0.5 + 0.5 + 0.5.
- 8. Nguyễn Gia Huy.
 - Absence: -2 2 2.
- 9. Phạm Lâm Gia Khánh.
 - Absence: -2.
 - Late: 15 mins.
 - Bonus: 0.5.

- 10. Pham Xuân Khánh.
 - Absence: -2.
 - Early attendence: 0.5
 - Late: 15 mins.
 - Bonus: 2 + 1 + 1.5 + 0.5 + 1 + 1.5.
- 11. Bùi Đức Khoa.
 - Absence: -2.
 - Early attendence: 0.5 + 0.5.
 - Bonus: 0.5 + 2.
- 12. TRẦN VŨ NGUYÊN KHÔI.
 - Early attendence: 0.5 + 0.5.
 - Late: 20 mins.
 - Bonus: 3 + 2 + 2 + 1 + 1.5 + 1 + 1.5.
- 13. Vũ Thị Ngọc Lan.
 - Early attendence: 0.5 + 0.5 + 0.5.
 - Bonus: 2.5 + 2 + 2 + 2.5 + 1 + 1.5 + 0.5 + 1 + 1.5.
- 14. TRẦN VĂN LÊN.
 - Early attendence: 0.5 + 0.5 + 0.5.
 - Bonus: 0.5 + 2 + 2 + 2.5 + 2.5 + 1 + 1.5 + 1 + 1 + 1.5.
- 15. Thái Anh Nhật Thiên Long.
 - Absence: -2 2.
 - Early attendence: 0.5.
 - Bonus: 2 + 2 + 2.5.
- 16. Lê Nguyễn Bảo Ngọc.
 - Absence: -2 1.
 - Late: 15 mins.
 - Bonus: 1 + 1.5 + 0.5 + 1 + 1.5.
- 17. LÊ HỒNG NGỌC.
 - Absence: -2 1.
 - Early attendence: 0.5.
 - Bonus: 2 + 2.5.
- 18. Nguyễn Hữu Nhân.
 - Absence: -2 2.
 - Early attendence: 0.5.
 - Bonus: 0.5.
- 19. Lâm Thiện Nhân.
 - Absence: -2.
 - Early attendence: 0.5 + 0.5.
 - Bonus: 2.5 + 1.
- 20. Phạm Minh Nhật.
 - Absence: -2
 - Early attendence: 0.5 + 0.5.
 - Bonus: 1.5 + 2 + 2 + 2.5.

- 21. Phạm Quỳnh Như.
 - Early attendence: 0.5 + 0.5 + 0.5.
- 22. NGUYỄN NGỌC QUỲNH NHƯ.
 - Early attendence: 0.5 + 0.5 + 0.5.
- 23. Đoàn Trương Thiên Phong.
 - Absence: -2.
 - Early attendence: 0.5.
- 24. Hồ Tấn Tài.
 - Early attendence: 0.5 + 0.5 + 0.5.
 - Bonus: 1.5 + 2 + 2 + 1 + 0.5 + 1.
- 25. Hồ Quốc Thành.
 - Early attendence: 0.5 + 0.5 + 0.5.
 - Bonus: 1 + 1.5 + 1.
- 26. Nguyễn Thị Minh Thư.
 - Absence: -2 2 2.
- 27. Đỗ THỊ HẢI TÌNH.
 - Early attendence: 0.5 + 0.5 + 0.5.
 - Bonus: 2 + 2 + 2.5 + 1 + 1.5 + 0.5 + 1 + 1.5.
- 28. Võ Đoàn Thái Toàn.
 - Early attendence: 0.5 + 0.5 + 0.5.
 - Bonus: 0.5 + 2 + 2 + 1 + 0.5 + 1.
- 29. TRẦN QUỐC TRUNG.
 - Early attendence: 0.5 + 0.5 + 0.5.
 - Bonus: 0.5 + 2 + 2 + 2.5 + 1 + 0.5 + 1.5.

6 Olympic Tin OLP ICPC

- 1. Đỗ ANH KIỆT [DAK].
 - Bonus: 0.5 (virus) + 1 (count rooms) + 1 (dice) + 1.5 (shortest route I).
- 2. TRẦN QUANG SƠN [TQS]. K3.
 - Bonus: 0.5 + 1 (prime) + 1 (houseboat).
- 3. Phạm Đăng Hoàng Thiên [PDHT]. K3.
 - Bonus: 0.5 + 1 (houseboat) + 2 (remove digit).

7 Miscellaneous