

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.

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

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PDF: URL: [.pdf](#).

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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. HUỖNH 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) $+ 2$ (message route) $+ 2$ (Christmas party).
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) $+ 1$ (coin combination II) $+ 1$ (grid path I) $+ 1.5$ (book shop) $+ 1$ (exp I) $+ 1$ (exp II) $+ 0.5$ (count divisor) $+ 1$ (common divisor) $+ 1.5$ (Josephus queries) $+ 2$ (sum divisor) $+ 0.75$ (next prime) $+ 1$ (binom coeff) $+ 1$ (create string II) $+ 1$ (distribute apple) $+ 1$ (Christmas party).
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) $+ 0.5$ (count divisor) $+ 0.75$ (next prime) $+ 1$ (prime multiple) $+ 1$ (binom coeff) $+ 1$ (create string II) $+ 1$ (distribute apple) $+ 1$ (Christmas party).
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) $+ 0.5$ (count divisor) $+ 1$ (common divisor) $+ 1$ (distribute apple).
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. HẦU TRUNG THÀNH.
- Absence: -2 - 2.
 - Early attendance: 0.5.
15. TẠ MINH THIÊN.
- 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 TRẦN.

- Absence: -2 - 2 - 2.
- Bonus:

18. NGUYỄN ANH TUYẾN.

- 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.

- Absence: -2.
- 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: $0.75 + 0.75 + 0.75 + 0.75$.

4. VŨ VĂN ĐẠT.

- Absence: -2.
- Early attendance: $0.75 + 0.75 + 0.75 + 0.75$.
- Bonus: $1 + 0.5$.

5. TRẦN VĂN HẬU.

- Absence: -2.
- Early attendance: $0.75 + 0.75 + 0.75 + 0.75$.
- Bonus: 1.

6. NGUYỄN NGỌC BÍCH HIỀN.

- Early attendance: $0.75 + 0.75 + 0.75 + 0.75 + 0.75$.
- Bonus: $0.25 + 1 + 1 + 2 + 1 + 1.5$.

7. NGUYỄN VĂN HIẾU.

- Absence: -2.
- Early attendance: $0.75 + 0.75 + 0.75$.

8. DƯƠNG XUÂN HƯNG [DXH].

- Early attendance: $0.75 + 0.75 + 0.75 + 0.75$.

- Bonus: $1 + 1 + 1$ (gift) + 1 (picture) + 2 (count rooms) + 2.5 (coin combination I) + 2 (coin combination II) + 3 (array description) + 1.5 (numerical differentiation OOP) 2 (next prime).
9. TRẦN LÊ GIA HUY.
- Early attendance: $0.75 + 0.75 + 0.75 + 0.75$.
10. TRẦN QUANG HUY.
- Absence: -2 .
 - Early attendance: $0.75 + 0.75 + 0.75$.
11. ĐẶNG PHÚC AN KHANG [DPAK].
- Early attendance: $0.75 + 0.75 + 0.75$.
 - Late: $15 + 52$ mins.
 - Bonus: $0.5 + 0.5 + 0.5 + 0.5 + 0.5 + 0.5 + 0.5 + 0.5 + 1 + 0.5$ (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) + 1.5 (edit distance) + 1.5 (longest common subsequence) + 1 (num diff polynomial) + 1.5 (prime multiple) + 0.75 (next prime) + 1 (binom coeff).
12. LƯƠNG QUỐC KHÁNH.
- Early attendance: $0.75 + 0.75 + 0.75 + 0.75$.
 - Bonus: $1 + 1 + 1 + 1$.
13. NGUYỄN HÀ DĂNG KHOA.
- Early attendance: $0.75 + 0.75 + 0.75 + 0.75$.
 - Bonus: 1 .
14. NGUYỄN HUY DĂNG KHOA.
- Absence: -1 .
 - Early attendance: $0.75 + 0.75$.
15. HUỖNH ĐỖ DĂNG KHOA.
- Late: $23 + 45 + 25$ mins.
 - Early attendance: 0.75 .
16. TRẦN TRUNG KIÊN.
- Early attendance: $0.75 + 0.75 + 0.75 + 0.75$.
17. NGUYỄN HUỖNH CHÍ LÂM.
- Early attendance: $0.75 + 0.75 + 0.75 + 0.75$.
 - Bonus: $1 + 0.75 + 1 + 1$.
18. LÊ HOÀNG LINH.
- Early attendance: $0.75 + 0.75 + 0.75$.
 - Bonus: $1 + 1$.
 - Late: 30 mins.
19. LÂM BẢO NGỌC.
- Absence: -1 .
 - Early attendance: $0.75 + 0.75 + 0.75 + 0.75$.
 - Bonus: 0.25 .
20. NGUYỄN LƯƠNG NGHĨA.
- Early attendance: $0.75 + 0.75 + 0.75 + 0.75 + 0.75$.
 - Bonus: $0.5 + 1 + 1 + 3 + 1.5 + 1.5 + 1.5$.
21. TRẦN PHÚC NGUYỄN.

- Early attendance: $0.75 + 0.75 + 0.75 + 0.75 + 0.75$.

22. BÙI VĂN NHỚ.

- Early attendance: $0.75 + 0.75 + 0.75 + 0.75$.
- Late: 40 mins.
- Bonus: $1 + 1 + 1 + 1 + 3 + 0.75$.

23. LÊ THANH TÂN.

- Absence: -1.
- Early attendance: $0.75 + 0.75$.
- Late: 5 mins.

24. HUỖNH THỊ KIỀU THU.

- Early attendance: $0.75 + 0.75 + 0.75 + 0.75 + 0.75$.
- Bonus: $1 + 1 + 1 + 1.5$.

25. HOÀNG NGHĨA TÍN.

- Early attendance: $0.75 + 0.75 + 0.75 + 0.75$.

26. HOÀNG ANH TUẤN.

- Absence: -2.
- Early attendance: $0.75 + 0.75 + 0.75 + 0.75$.

27. NGÔ THANH TÙNG.

- Absence: -2 - 2.
- Early attendance: 0.75.
- Late: 29 mins.

28. NGÔ HOÀNG TÙNG [NHT].

- Early attendance: $0.75 + 0.75 + 0.75 + 0.75$.
- Bonus: $0.5 + 0.5 + 0.5 + 0.5 + 0.5 + 1.5 + 0.5 + 0.5$ (virus) + 0.5 (vni) + 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 (exp I) + 1 (exp I) + 1 (num diff poly) + 1.25 (num diff poly 1) + 1.5 (Josephus queries) + 2 (sum divisor) + 0.75 (next prime) + 0.75 (next prime) + 1 (binom coeff) + 1 (create string II) + 1 (distribute apple) + 1 (Christmas party) + 1.5 (permutation order).

29. TRẦN MỘNG TUYỀN.

- Absence: -1.
- Early attendance: $0.75 + 0.75 + 0.75$.

30. NGUYỄN QUANG VỸ.

- Absence: -1.
- Early attendance: $0.75 + 0.75 + 0.75$.
- Bonus: $1.5 + 4 + 1 + 1.5$.

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

1. VÕ NGỌC TRÂM ANH [VNТА].

- Early attendance: $0.25 + 0.5 + 0.25 + 0.5 + 0.25 + 0.5 + 0.25 + 0.5 + 0.25$.
- Bonus: $0.75 + 1 + 2 + 1.5 + 0.5 + 0.5 + 0.5$ (Fibonacci + Lucas) + 0.5 (virus) + 2.5 (gen func) + 2 (Euler candy gen func) + 0.5 (houseboat) + 0.5 (prime) + 1 (red black) + 1 (count rooms) + 1 (labyrinth) + 1 (build roads) + 1 (message routes) + 1 (build team) + 1 (round trip) + 1 (monster) + 1.5 (flight route) + 1 (dice) + 1 (coin) + 1 (coin combination I) + 1 (coin combination II) + 1 (grid path) + 2 (Dijkstra) + 3 (proof Dijkstra) + 2.5 (Dijkstra priority queue) + 1 (exp I) + 1 (exp II) + 1 (Stirling 2 DP) + 0.5 + 0.75 + 1 (valid parentheses) + 1 (C++ valid parentheses) + 1 (PAC Catalan C++) + 1 (Pascal triangle, multinomial) + 0.5 (count geo domain) + 1.5 (Josephus queries) + 1.5 (Bell matrix multiplication) + 0.5 + 0.5 + 1 (count coprime pair) + 1 (binom coeff) + 1 (create string II) + 1 (distribute apple) + 1 (Christmas party).

2. HOÀNG ANH [HA].

- Early attendance: $0.25 + 0.25 + 0.5 + 0.25 + 0.5 + 0.25 + 0.5 + 0.25$.
- Bonus: $1.5 + 1 + 0.5 + 1.5 + 1$ (Stirling 2).

3. VÕ HUỖNH THÁI BẢO.

- Early attendance: $0.25 + 0.25 + 0.5 + 0.25 + 0.5 + 0.25 + 0.5 + 0.25$.
- Late: 7 mins.
- Bonus:

4. TRẦN MẠNH ĐỨC.

- Absence: -1.
- Early attendance: $0.25 + 0.5 + 0.25 + 0.25 + 0.25 + 0.5$.
- Bonus: $1.5 + 1 + 1.5 + 0.5$ (Stirling 2).
- Late: $18 + 7$ mins.

5. NGUYỄN TRUNG HẬU.

- Absence: -2 - 2 - 2 - 2.
- Early attendance: $0.25 + 0.25 + 0.25$.
- Bonus: 1.
- Late: 24 mins.

6. PHẠM PHƯỚC MINH HIẾU.

- Early attendance: $0.25 + 0.5 + 0.25 + 0.5 + 0.25 + 0.5 + 0.25 + 0.5 + 0.25$.
- Bonus: $1 + 0.5 + 1$ (Stirling 2) + 1 (Stirling 2 Python).

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 bằng hàng nên việc mô tả cấu trúc hình học là phần khó chính)

7. HOÀNG QUANG HUY.

- Absence: -2.
- 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.

- Absence: -1 - 1.
- Early attendance: $0.25 + 0.5 + 0.25 + 0.25 + 0.25$.
- Bonus: $1.5 + 1 + 1 + 1 + 1.5 + 1.5 + 1.5$ (\$).
- Late:

9. DẶNG PHÚC AN KHANG.

- Bonus: $0.5 + 1 + 1$.

10. PHẠM MINH KHOA.

- Absence: -2 - 2.
- Early attendance: $0.25 + 0.5 + 0.25 + 0.5 + 0.25 + 0.25$.
- Bonus:
- Late:

11. TRẦN THÀNH LỢI.

- Absence: -2 - 2 - 2 - 2.
- Early attendance: $0.25 + 0.25$.

- Bonus:
 - Late: $23 + 60$ mins.
12. LÊ ĐỨC LONG.
- Absence: -2.
 - 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: $0.25 + 0.5 + 0.25 + 0.25 + 0.25 + 0.5$.
 - Bonus: $1 + 1$.
 - Late: $24 + 3 + 12$ mins.
14. HUỖNH NHẬT QUANG.
- Absence: -2 - 2.
 - Early attendance: $0.25 + 0.25$.
 - Late: $10 + 20 + 20$ mins.
 - Bonus:
15. CAO SỸ SIÊU.
- Early attendance: $0.25 + 0.5 + 0.25 + 0.5 + 0.25 + 0.5 + 0.25 + 0.5$.
 - Bonus: $1 + 1 + 1$.
16. SƠN TÂN [ST].
- Early attendance: $0.25 + 0.5 + 0.25 + 0.5 + 0.25 + 0.5 + 0.25 + 0.5$.
 - 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 [NNT].
- Absence: -2
 - Early attendance: $0.25 + 0.25 + 0.5 + 0.25 + 0.5$.
 - Bonus: $3 + 1 + 1 + 1.5 + 2$ (Catalan) + 5 (Euler candy) + 2.5 (induction) + 1 (toss coin) + 1 (dice roll) + 1 (dice roll) + $1 + 1 + 2$ (combinator identity) + 1.5 (dollar) + $0.5 + 2.5 + 1.5 + 1 + 1 + 1 + 1 + 1.5 + 1 + 1.5$ (Stirling 2 recursive).
 - Late: $5 + 23 + 34$ mins.
18. PHAN VINH TIẾN [PVT].
- Late: $8 + 25 + 16$ mins.
 - Early attendance: $0.25 + 0.5 + 0.25 + 0.5 + 0.25$.
 - Bonus: $2 + 0.5$ (virus) + $1 + 2$ (binomial) + 1 (exp I) + 1 (exp II) + 1 (Stirling 2 DP) + 1 (Bell) + 1.5 (ads) + 1 (banana).

3.1 Potential topics for midterm- & final exams

- Chứng minh bằng phương pháp quy nạp toán học.
- Bài toán chia kẹo 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: $0.5 + 0.5 + 0.5 + 0.5$.

2. TRƯƠNG CÔNG HOAN.

- Absence: -2.
- Early attendance: $0.5 + 0.5 + 0.5 + 0.5$.

3. LỮ MINH HOÀNG.

- Early attendance: $0.5 + 0.5 + 0.5 + 0.5 + 0.5$.

4. DINH KIM HƯNG.

- Early attendance: $0.5 + 0.5 + 0.5 + 0.5 + 0.5$.
- Bonus: 3.

5. HUỲNH VÕ QUỐC KHÁNH.

- Absence: -2 - 2 - 2.
- Early attendance: $0.5 + 0.5$.

6. NGUYỄN NHẬT KHÔI.

- Absence: -2.
- Early attendance: $0.5 + 0.5 + 0.5$.

7. VÒNG LÝ NĂM PHÚC VLNP.

- Early attendance: $0.5 + 0.5 + 0.5 + 0.5 + 0.5$.
- Bonus: $1.5 + 2$ (extended scheduling).

8. HẦU TRUNG THÀNH.

- Absence: -2 - 2 - 2.
- Early attendance: 0.5.
- Late: 5 mins.

9. NGUYỄN THI.

- Absence: -2 - 2 - 2 - 2 - 2.

10. ĐẶNG NGUYỄN DUY TRƯỜNG.

- Early attendance: $0.5 + 0.5 + 0.5 + 0.5 + 0.5$.

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

1. CAO NGUYỄN GIA AN.

- Early attendance: $0.5 + 0.5 + 0.5 + 0.5$.
- Bonus: $3.5 + 2 + 2 + 2.5 + 2.5 + 1 + 1.5 + 1 + 1 + 1.5 + 2.5 + 1$ (eval func) $+ 1.5 + 2 + 2 + 2.5$.

2. HOÀNG TRÂM ANH.

- Early attendance: $0.5 + 0.5 + 0.5 + 0.5$.
- Bonus: $1 + 2 + 2 + 2.5 + 1.5 + 0.5 + 1 + 1.5$.

3. BÙI NGUYỄN MINH DŨNG.

- Early attendance: $0.5 + 0.5 + 0.5 + 0.5$.
- Bonus: $2.5 + 2 + 2 + 2.5 + 2.5 + 1 + 1.5$.

4. NGUYỄN NGỌC HÂN.

- Early attendance: $0.5 + 0.5 + 0.5 + 0.5$.
- Bonus: $0.5 + 1 + 1.5 + 0.5 + 1 + 1 + 1.5 + 1 + 1.5 + 2 + 2 + 2.5$.

5. NGUYỄN THÀNH THÁI HIỆP.

- Early attendance: $0.5 + 0.5 + 0.5 + 0.5$.
- Bonus: $3 + 2 + 2 + 2.5 + 2.5 + 1 + 1.5 + 0.5 + 1 + 1.5 + 1 + 1.5 + 2.5$ (near perfect) $+ 2 + 2$.

6. VŨ NGUYỄN YẾN HOA.

- Early attendance: $0.5 + 0.5 + 0.5 + 0.5$.
- Bonus: $1 + 2 + 2.5 + 1 + 1.5 + 0.5 + 1$ (eval func) $+ 1.5 + 2$.

7. ĐỖ HUY HOÀNG.

- Early attendance: $0.5 + 0.5 + 0.5 + 0.5$.

8. NGUYỄN GIA HUY.

- Absence: $-2 - 2 - 2$.
- Early attendance: $0.5 + 1$ (eval func) $+ 1.5 + 2 + 2 + 2.5$.

9. PHẠM LÂM GIA KHÁNH.

- Absence: -2 .
- Late: 15 mins.
- Bonus: $0.5 + 0.5 + 1 + 1.5 + 2$.

10. PHẠM XUÂN KHÁNH.

- Absence: -2 .
- Early attendance: 0.5
- Late: $15 + 30$ mins.
- Bonus: $2 + 1 + 1.5 + 0.5 + 1 + 1.5 + 1 + 2$.

11. BÙI ĐỨC KHOA.

- Absence: -2 .
- Early attendance: $0.5 + 0.5 + 0.5$.
- Bonus: $0.5 + 2 + 1$ (eval func) $+ 1.5$.

12. TRẦN VŨ NGUYỄN KHÔI.

- Early attendance: $0.5 + 0.5 + 0.5$.
- Late: 20 mins.
- Bonus: $3 + 2 + 2 + 1 + 1.5 + 1 + 1.5 + 1 + 1.5 + 2 + 2$ (near perfect) $+ 2 + 2.5$.

13. VŨ THỊ NGỌC LAN.

- Early attendance: $0.5 + 0.5 + 0.5 + 0.5$.
- Bonus: $2.5 + 2 + 2 + 2.5 + 1 + 1.5 + 0.5 + 1 + 1.5 + 1 + 1.5 + 2 + 2 + 2.5$.

14. TRẦN VĂN LÊN.

- Early attendance: $0.5 + 0.5 + 0.5 + 0.5$.
- Bonus: $0.5 + 2 + 2 + 2.5 + 2.5 + 1 + 1.5 + 1 + 1 + 1.5 + 1$ (eval func) $+ 1.5 + 2 + 2 + 2.5$.

15. THÁI ANH NHẬT THIÊN LONG.

- Absence: $-2 - 2 - 2$.
- Early attendance: 0.5.
- Bonus: $2 + 2 + 2.5$.

16. LÊ NGUYỄN BẢO NGỌC.

- Absence: $-2 - 1$.
 - Late: $15 + 15$ mins.
 - Bonus: $1 + 1.5 + 0.5 + 1 + 1.5 + 1 + 1.5 + 2$.
17. LÊ HỒNG NGỌC.
- Absence: $-2 - 1$.
 - Early attendance: $0.5 + 0.5$.
 - Bonus: $2 + 2.5 + 1$ (eval func) $+ 1.5 + 2 + 2$.
18. NGUYỄN HỮU NHÂN.
- Absence: $-2 - 2$.
 - Early attendance: 0.5 .
 - Bonus: 0.5 .
 - Late: 15 mins.
19. LÂM THIÊN NHÂN.
- Absence: -2 .
 - Early attendance: $0.5 + 0.5 + 0.5$.
 - Bonus: $2.5 + 1$.
20. PHẠM MINH NHẬT.
- Absence: -2
 - Early attendance: $0.5 + 0.5 + 0.5$.
 - Bonus: $1.5 + 2 + 2 + 2.5 + 1 + 1.5 + 2$.
21. PHẠM QUỲNH NHƯ.
- Early attendance: $0.5 + 0.5 + 0.5 + 0.5$.
 - Bonus: 1 (eval func)
22. NGUYỄN NGỌC QUỲNH NHƯ.
- Early attendance: $0.5 + 0.5 + 0.5 + 0.5$.
23. ĐOÀN TRƯỞNG THIÊN PHONG.
- Absence: -2 .
 - Early attendance: $0.5 + 0.5$.
24. HỒ TẤN TÀI.
- Early attendance: $0.5 + 0.5 + 0.5$.
 - Bonus: $1.5 + 2 + 2 + 1 + 0.5 + 1 + 1 + 1.5 + 2$.
 - Late: 10 mins.
25. HỒ QUỐC THÀNH.
- Early attendance: $0.5 + 0.5 + 0.5 + 0.5$.
 - Bonus: $1 + 1.5 + 1 + 1 + 1.5$.
26. NGUYỄN THỊ MINH THƯ.
- Absence: $-2 - 2 - 2 - 2$.
27. ĐỖ THỊ HẢI BÌNH.
- Early attendance: $0.5 + 0.5 + 0.5 + 0.5$.
 - Bonus: $2 + 2 + 2.5 + 1 + 1.5 + 0.5 + 1 + 1.5 + 1 + 1.5 + 2$.
28. VÕ ĐOÀN THÁI TOÀN.
- Early attendance: $0.5 + 0.5 + 0.5 + 0.5$.
 - Bonus: $0.5 + 2 + 2 + 1 + 0.5 + 1 + 1 + 1.5 + 2 + 2.5$.
29. TRẦN QUỐC TRUNG.
- Early attendance: $0.5 + 0.5 + 0.5 + 0.5$.
 - Bonus: $0.5 + 2 + 2 + 2.5 + 1 + 0.5 + 1.5 + 1 + 1.5 + 2$.

6 Olympic Tin OLP ICPC

1. ĐỖ ANH KIỆT [DAK].

- Bonus: 0.5 (virus) + 1 (count rooms) + 1 (dice) + 1.5 (shortest route I) + 1 (distribute apple).

2. TRẦN QUANG SƠN [TQS]. K3.

- Bonus: 0.5 + 1 (prime) + 1 (houseboat).

3. PHẠM DĂNG HOÀNG THIÊN [PDHT]. K3.

- Bonus: 0.5 + 1 (houseboat) + 2 (remove digit) + 1.5 (next prime) + 2 (Christmas party).

7 Miscellaneous