# Explanation of Scoring Logic and Thresholds

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## 1. Overview of the Scoring System

The Student Scoring System is a **rule-based intelligence framework** designed to convert raw student data into **interpretable performance scores**. The objective is to help mentors quickly understand a student's academic standing, wellbeing, productivity, and career readiness, and take appropriate mentoring actions.

All scores are:

- Deterministic and transparent
- Normalized to a **0–100 scale**
- Easy to interpret and explain
- Aligned with the HEPro Dedicated Mentoring System

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## 2. Academic Performance Score (APS)

**Purpose**

To measure a student's academic strength and consistency.

**Inputs Used**

- GPA (0–10)
- Attendance percentage (0–100)
- Assignments completion percentage (0–100)

**Scoring Logic**

GPA is multiplied by 10 to normalize it to a 0–100 scale. Attendance and assignment completion are already in percentage form.

**Formula**

APS = 0.4 × (GPA × 10)

+ 0.3 × Attendance

+ 0.3 × Assignments Completion

**Rationale**

- GPA reflects core academic ability (highest weight)
- Attendance and assignments reflect discipline and consistency

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## 3. Wellness & Wellbeing Score (WWS)

**Purpose**

To assess a student's mental and physical wellbeing in a non-clinical manner.

**Inputs Used**

- Stress level (1–10)
- Mental wellbeing (1–10)
- Sleep hours (0–10)

**Scoring Logic**

Stress is inversely related to wellbeing and is therefore inverted using (10 − stress_level). All 1–10 scale values are normalized to 0–100.

**Formula**

WWS = 0.4 × (10 − Stress Level) × 10

+ 0.4 × Mental Wellbeing × 10

+ 0.2 × Sleep Hours × 10

**Rationale**

- High stress reduces wellbeing
- Mental wellbeing is a strong positive indicator
- Sleep supports overall wellbeing

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## 4. Productivity & Time Management Score (PTMS)

**Purpose**

To measure efficiency, focus, and task execution.

**Inputs Used**

- Productivity score (1–10)
- Distractions (1–10)
- Assignments completion (0–100)

**Scoring Logic**

Distractions are inverted to ensure higher values always indicate better performance.

**Formula**

PTMS = 0.4 × Productivity Score × 10

+ 0.4 × (10 − Distractions) × 10

+ 0.2 × Assignments Completion

**Rationale**

- Productivity and distractions are opposing factors
- Assignment completion reinforces execution

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## 5. Career Readiness Score (CRS)

**Purpose**

To evaluate preparedness for career decision-making and employability.

**Inputs Used**

- Career clarity (1–10)
- Skill readiness (1–10)
- Engagement score (0–100)

**Formula**

CRS = 0.4 × Career Clarity × 10

+ 0.4 × Skill Readiness × 10

+ 0.2 × Engagement Score

**Rationale**

- Career clarity and skill readiness are primary indicators
- Engagement reflects effort and exposure

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## 6. Student Readiness Index (SRI)

**Purpose**

To act as the **master indicator of student readiness**, as defined in the HEPro architecture.

**Formula**

SRI = 0.30 × APS + 0.25 × WWS + 0.20 × PTMS + 0.25 × CRS

**Explanation**

SRI combines academic, wellness, productivity, and career dimensions into a single score used to trigger mentoring interventions.

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## 7. Student Classification Thresholds

Based on **SRI score**, students are classified as:

| SRI Range | Category | Interpretation |
|---|---|---|
| ≥ 75 | Green | Performing well, minimal intervention |
| 60 – 74 | Blue | Stable, light mentoring |
| 45 – 59 | Yellow | Needs regular guidance |
| < 45 | Red | High risk, urgent mentoring |

**Rationale**

These thresholds allow mentors to quickly prioritize students based on risk level and readiness.

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## 8. Validation

Sample student records were reviewed to ensure:

- High stress lowers WWS
- Strong academics increase APS
- Poor career clarity reduces CRS
- Final SRI reflects combined performance logically

This confirms the correctness and interpretability of the scoring system