



## **Aeronautics Department**

### **Project on Flight Planning and Flight Simulation**

#### **AUN QA – Criteria – 3 – Teaching and Learning Approach**

***KPI - 3.2. The teaching and learning activities are shown to allow students to participate responsibly in the learning process.***

***KPI - 3.3. The teaching and learning activities are shown to involve active learning by the students.***

#### **Introduction:**

The project work and presentation aimed to immerse students in a comprehensive learning experience integrating flight planning skills with practical flight simulation using the Redbird TD2 simulator. This hands-on approach was designed to enhance students' understanding of aviation principles and prepare them for real-world scenarios.

#### **Key features of the activity**

1. **Integrated Learning Approach:** The project combined theoretical knowledge with practical application, allowing students to apply flight planning skills in simulated environments.
2. **Utilization of Redbird TD2 Simulator:** Students extensively utilized the Redbird TD2 simulator to practice and refine their flight skills, replicating various real-world scenarios in a safe and controlled environment.
3. **Comprehensive Evaluation:** Students' performance was assessed based on flight planning accuracy, simulation proficiency, decision-making abilities, safety compliance, and regulatory understanding.

#### **Objectives of the activity**

1. To provide students with hands-on experience in flight planning and simulation, aligning with industry standards and fostering innovation in aviation education.
2. To enhance students' understanding of flight planning processes, advanced simulation technology, and regulatory compliance within the aviation industry.
3. To assess students' competence, abilities, and knowledge in applying aviation principles to real-world scenarios, preparing them for future careers in aviation.

#### **Evaluators**

**Aj. Mari Prabu Govindan, Instructor**

## Learning Outcomes

| EXPECTED LEARNING OUTCOME                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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| <ol style="list-style-type: none"><li>1. Mastery of Flight Planning Skills: Students will demonstrate proficiency in selecting flight routes, determining altitude and airspeed, and incorporating weather and regulatory considerations into their plans.</li><li>2. Effective Use of Simulation Technology: Students will develop expertise in operating the Redbird TD2 simulator, leveraging its controls and functions to simulate various flight scenarios.</li><li>3. Enhanced Decision-Making Abilities: Students will refine their decision-making skills in response to simulated challenges, including weather disruptions, emergencies, and regulatory constraints.</li><li>4. Safety and Regulatory Compliance: Students will prioritize safety and adhere to regulatory requirements, ensuring their simulated flights comply with airspace regulations, NOTAMs, and TFRs.</li><li>5. Presentation and Communication Skills: Students will effectively communicate their project findings and flight simulation experiences through structured presentations, engaging with external examiners and peers to convey their understanding and insights.</li></ol>                                                                                                                                                                                                                                                                                                                                                           |
| COURSE LEARNING OUTCOME                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <ol style="list-style-type: none"><li>6. Behaviour that displays self-discipline, punctuality and social accountability for themselves and society</li><li>7. Develop clear understanding of the subject application in real life and its impact on organization society and mankind which enables students to handle setbacks with ease instead of being crippled by failure and be resilient.</li><li>8. Able to apply knowledge about the flight plan, fuel management, performance of the aircraft ,the weight and balance to solve problems faced by a Pilot.</li><li>9. Ability to communicate with diversity groups of people and can speak both Thai and foreign languages (English) fluently effectively with other groups which boost teamwork and lead to better collaboration in their workplace when they work as Flight Dispatch Officers.</li><li>10. The students will help the pilots by preparing flight plans with learned concepts and practices.</li><li>11. Ability to communicate with both verbal and written communication with both Thai and English fluently using presentations to boost teamwork and lead to better collaboration in their workplace.</li><li>12. The students will be able to use of ICT skills which allow them to do their work faster, more efficiently and with fewer wasted resources. The students will have the skills and knowledge to increase productivity, propelling product and service development, and fostering team-building with digital communication tools</li></ol> |

**Evaluation/Assessment Criteria**

Marks were allotted for each student based on the Creating a flight plan, Flying in simulator as per flight plan, Project report and Individual project presentation. The marks were included in the final exam.

**Students' performance in the project was evaluated based on the following criteria:**

**Flight Planning:** The accuracy and thoroughness of flight plans created by students.

**Simulation Proficiency:** Competency in operating the Redbird 2 simulator, including effective use of controls and responding to simulated scenarios.

**Decision-Making:** Ability to make sound decisions in various simulated flight situations, including weather-related challenges and emergencies.

**Safety and Compliance:** Adherence to safety protocols, risk assessment, and regulatory compliance during flight planning and simulation.

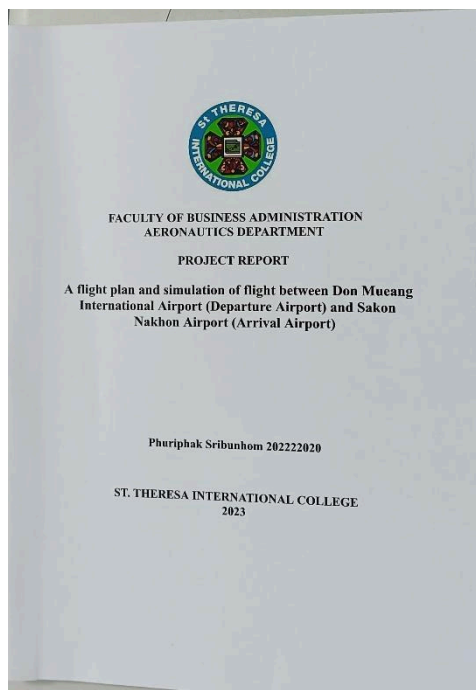
**Observations through the Activity****Flight Simulation done by students:**

Each student has performed their flight simulation with the Redbird TD2 flight simulator as per the flight plan created by them.



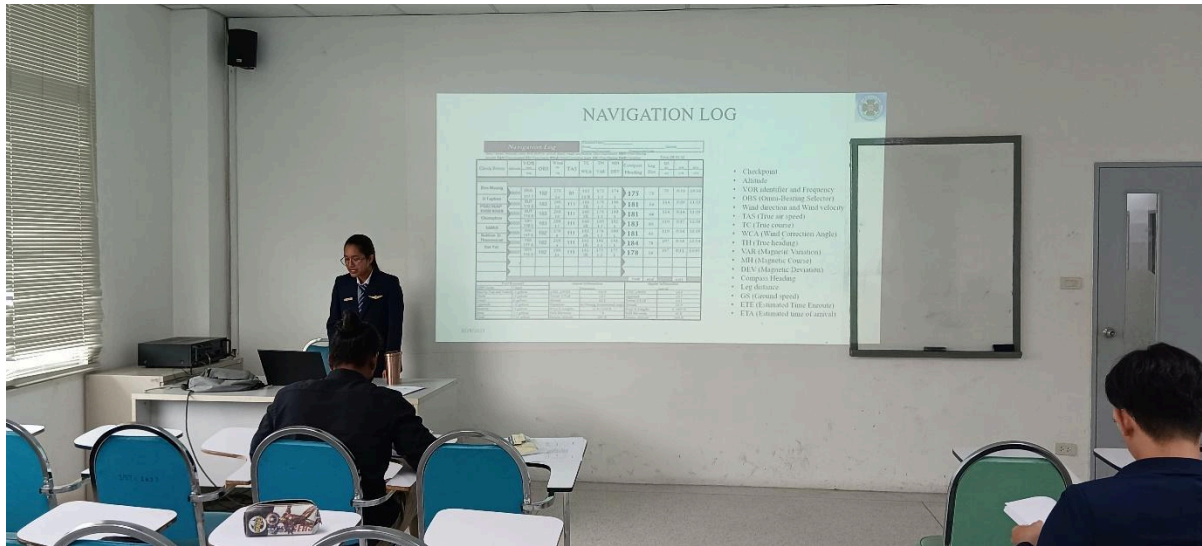
### Sample project report:

A project report was done by the students including the flight plan calculations, route calculations, Navigation log, Fuel required calculations, Airport information, Weather log, Weight and Balance calculations, Take-off and Landing performance calculations, NOTAMS and Flight simulation experiences.



### Presentation done by students:

Each student individual prepared a presentation on the work done by them and presented it to external examiners as per the schedule given below. The external examiners provided feedback and rated each presentation done by the students on Content, Organization, Delivery, Visual aids, Audience engagement, Time management and overall impression of the presentation.



## Scores

| S.No. | Student Code | Student Full Name     | Total<br>(40) | Outoff<br>24 |
|-------|--------------|-----------------------|---------------|--------------|
| 1     | 202222006    | CHANAPA TONTHOON      | 38            | 23           |
| 2     | 202222009    | CHOTIROS CHUSREE      | 38            | 23           |
| 3     | 202222013    | MONTON CHANNOK        | 35            | 21           |
| 4     | 202222014    | NAMPHET DUANGJAN      | 35            | 21           |
| 5     | 202222015    | NAPATSAKORN TUNSANNOI | 35            | 21           |

|    |           |                       |    |    |
|----|-----------|-----------------------|----|----|
| 6  | 202222016 | NATHAWAT PALAKHAMHARN | 37 | 22 |
| 7  | 202222020 | PHURIPHAK SRIBUNHOM   | 40 | 24 |
| 8  | 202222030 | SIRICHAIR PHROMCHAIYA | 40 | 24 |
| 9  | 202222034 | SURIYO THONGAIM       | 38 | 23 |
| 10 | 202222037 | TIAN KAEWSRINUAN      | 36 | 22 |
| 11 | 202222042 | THANAWAT KUNDTHAISONG | 37 | 22 |
| 12 | 202222046 | VERA JOHNPAUL GUSEVA  | 37 | 22 |
| 13 | 202222050 | WIPHADA WICHIANAN     | 39 | 23 |
| 14 | 202222052 | JARIYA CHANNOK        | 36 | 22 |
| 15 | 212222006 | VINAYAK SONTHLIWAL    | 34 | 20 |

### **Pictures**

Please find pictures attached in each segment of the report.