Sajih Bin Suja

25/D, Shukrabad, Dhaka-1207, Bangladesh
| sajih.binsuja5@gmail.com | linkedin.com/in/saih538 | github.com/sbsLabib

Research Interests

Fluid Mechanics, CFD, Multiphase Flows, Energy Systems, Thermal Management

Professional Experience

Walton Hi-Tech Industries PLC. **August 2023 – Present**
Simulation Engineer – Department of Research & Innovation – Residential Air Conditioner *Gazipur, Bangladesh*

- Optimization and engineering design of centrifugal blowers and axial exhaust fans.
- Conduct computational and performance analyses of indoor and outdoor units, augmented by reliability and transportation testing to ensure optimal air conditioner functionality.
- CAD-based design, prototyping and fitting assessments of air-conditioner components.

Research Experience

Computational Fluid Dynamics Lab, KUET **2020 – 2023**
Research Assistant *Khulna, Bangladesh*

- Numerical analysis on porous metal foam for thermal management of high heat flux systems.
- Investigating swirling jets through numerical studies.
- Researched impact of high heat flux and thermal management of electrical components.
- Numerical computations on non-premixed methane-oxygen jet for metal melting.

Publications

Journal Publications

- **Suja, S.B.**, Pranto, M.R.I. and Ahmed, Z.U., "Swirling Jet Impingements for Thermal Management of High Concentrator Solar Cells Using Nanofluids." *International Journal of Thermofluids*, Volume 19C (2023), 100387. ISSN 2666-2027. DOI: https://doi.org/10.1016/j.ijft.2023.100387.

Conference Proceedings

- **Suja, S.B.**, Pranto, M.R.I. and Ahmed, Z.U., "Numerical Analysis of Swirling Jet Impingements for Thermal Management of HCPV using Nanofluids." In *ICMIEE 2022: International Conference of Mechanical, Industrial & Energy Engineering*, Khulna, 22-24 December.
- Alam, S.I., **Suja, S.B.**, and Islam, M.S., "Influence of Venturi on Heat Transfer Characteristics of Nanofluids Flowing Across Pipe." In *ICMERE 2021: International Conference of Mechanical Engineering and Renewable Energy*, Chittagong, 12-14 December.
- **Suja, S.B.**, Pranto, M.R.I., Turna, R.N. and Ahmed, Z.U., "Conjugate Heat Transfer Analysis of Different CPU Cooling Processes Using Computational Fluid Dynamics." In *ICMIEE 2020: International Conference of Mechanical, Industrial & Energy Engineering*, Khulna, 19-21 December.

Academic Credentials

Khulna University of Engineering & Technology **2017 – 2022**
Bachelor of Science in Mechanical Engineering *Khulna, Bangladesh*

CGPA– 3.13/4.00

Standardized Tests

Graduate Record Examination (GRE)
Total Score – 324/340, Quantitative Reasoning – 170/170, Verbal Reasoning – 154/170, Analytical Writing Assessment – 4.0/6.0.
Date Taken: November 3rd, 2022

International English Language Testing System (IELTS)
Overall Band Score – 8.0, Speaking – 8.0, Reading – 9.0, Listening – 9.0, Writing – 6.5.
Date Taken: November 3rd, 2022

Technical Skills

CAD: SOLIDWORKS, Fusion 360
CAE: ANSYS FLUENT, ANSYS CFX, Star-CCM+, OpenFOAM, SIMULIA Abaqus, ANSYS Mechanical, LS-Dyna
Languages: Python, MATLAB, C
Graphics and Rendering: KeyShot, Illustrator, Photoshop, Blender 2.9

Certifications

- **Certified SolidWorks Associate (CSWA)** – Issued by Dassault Systèmes.
- **Online Courses**
  - ENGR2000X: A Hands-on Introduction to Engineering Simulations – Cornell University (edX).
  - MATLAB Programming for Engineers and Scientists – Vanderbilt University (Coursera).
  - Excel Skills for Business – Macquarie University (Coursera).
  - Python for Everybody – University of Michigan (Coursera).

Technical Presentation

- Pranto, M. R. I., **Suja, S. B.**, "Smart and Eco-friendly E-waste recycling system", Mechanical Festival Poster Presentation, Department of Mechanical Engineering, Khulna University of Engineering & Technology, Khulna, September 2019.

Awards

- Finalist – Aer-O-Vacx Segment – Cognizance at Indian Institute of Technology (IIT), Roorkee, 2021.
- Third Place – Poster Presentation – Mechanical Festival at Department of Mechanical Engineering, KUET, 2019.
- Runners Up - KUET Inter Department Soccer, 2017-18 Season.

Extracurricular Activities

- Organized workshops on Computational Fluid Dynamics and "Speak Out For Engineering – SOFE, Khulna Regional Heat" as Assistant General Secretary of IMechE KUET Student Chapter.
- Led a team of four as Executive (Graphics & Content) for Ignition 2019, a national mechanical festival by KUET's Mechanical Engineering Department.
- Manager (Student) of KUET Mechanical Department Soccer team.

References

Dr. Zahir Uddin Ahmed
Professor
Department of Mechanical Engineering, KUET
E-mail: zuahmed@me.kuet.ac.bd

Sl. No. : Tr. 20-0555

KHULNA UNIVERSITY OF ENGINEERING & TECHNOLOGY
BANGLADESH

TRANSCRIPT OF ACADEMIC RECORD

1. Name of the Student	: **Sajih Bin Suja**
2. Roll Number	: 1605005
3. Nationality	: Bangladeshi
4. Date of Enrolment	: December 04, 2016
5. Degree Awarded	: **Bachelor of Science in Mechanical Engineering,** abbreviated as **B. Sc. Eng. (ME)**
6. Sessions Attended	: 2016-2017 to 2019-2020
7. Date of Completion of the Degree Requirements	: April 25, 2022
8. Number of Students in the Class	: 142
9. Minimum Number of Credits Required for the Degree	: 160.00
10. Total Number of Credits Earned by the Student	: 161
11. Cumulative Grade Point Average (CGPA) Earned by the Student	: **3.13**
12. Highest Cumulative Grade Point Average (CGPA) in the Class	: 3.93
13. Number of Students in the Class Equal to or Better CGPA than this Student	: 67
14. Medium of Instruction	: English

Four (4) additional sheets containing name of the courses studied and grades obtained therein are enclosed. General information are printed overleaf.

Prepared by : .....

Verified by : .....

Date : November 09, 2022

Controller of Examinations

General Information

Grading System:

The letter grade system shall be used to assess the performance of the student and shall be as follows:

Numerical grade	Letter grade	Grade point
80% or above	**A+** A Plus	4.00
75% to less than 80%	**A** A	3.75
70% to less than 75%	**A-** A Minus	3.50
65% to less than 70%	**B+** B plus	3.25
60% to less than 65%	**B** B	3.00
55% to less than 60%	**B-** B Minus	2.75
50% to less than 55%	**C+** C Plus	2.50
45% to less than 50%	**C** C	2.25
40% to less than 45%	**D** D	2.00
Less than 40%	**F**	0.00
Continuous Assessment (For courses extended over two regular Terms, such as project/thesis/design, etc.)	**X**	-
Withdrawal	**W**	-
Incomplete	**I**	
Non Credit Course	**S/U** (Satisfactory/Unsatisfactory)	

Calculation of GPA and CGPA:

Grade point average (GPA) is the weighted average of the grade points obtained in all the courses passed/completed by a student in a Term. 'F' grades will not be counted for GPA calculation. GPA of a Term will be calculated as follows:

$$\text{GPA} = \frac{\sum_{i=1}^{n} C_i G_i}{\sum_{i=1}^{n} C_i}$$

Where n is the total number of courses passed by the student, C_i is the number of credits allotted to a particular course i and G_i is the grade point corresponding to the grade awarded for the course.

Cumulative Grade Point Average (CGPA) gives the cumulative performance of the student from first Term up to any other Term to which it refers and is computed by dividing the total weighted grade points ($\Sigma\ C_iG_i$) accumulated up to the date by the total credit hours ($\Sigma\ C_i$). Both GPA and CGPA will be rounded off to the second place of decimal for reporting.

- Maximum Attainable CGPA= 4.00
- CGPA Required for Degree with HONOURS = 3.75 or better
- Minimum CGPA Required for Award of Degree = 2.20

Notes:

1. *It may be noted that there is an anomaly regarding "sessions attended" and "date of completion of the degree requirements". The anomaly has been created due to delay in starting an academic session and extension of the academic session beyond stipulated calendar year due to various reasons.*

2. *For further information please contact Controller of Examinations, Khulna University of Engineering & Technology, Khulna 9203, Bangladesh or e-mail: <controller@kuet.ac.bd>*

KHULNA UNIVERSITY OF ENGINEERING & TECHNOLOGY
BANGLADESH

Additional Sheet-1
DETAILS OF ACADEMIC RECORD

Department	: Mechanical Engineering	**Roll No.**	: 1605005
Student's Name	: Sajih Bin Suja	**Session**	: 2016-2017

First Year First Term — **Period** : February 2017 to August 2017

Serial No.	Course No.	Course Title	Credit	Grade Point	Grade
1	Ch 1105	Engineering Chemistry	3.00	3.50	A-
2	Ch 1106	Sessional on Ch 1105	0.75	3.50	A-
3	Hum 1105	English	3.00	3.75	A
4	Hum 1106	Sessional on Hum 1105	0.75	3.75	A
5	Math 1105	Mathematics I	4.00	3.25	B+
6	ME 1105	Thermal Engineering	3.00	3.00	B
7	ME 1106	Sessional on ME 1105	0.75	3.75	A
8	ME 1107	Manufacturing process	4.00	3.50	A-
9	ME 1108	Sessional on ME 1107	0.75	3.50	A-
10	MES 1102	Work Shop practice	0.75	3.75	A

Earned Credits	: **20.75**	Grade Point Average (GPA)	: **3.44**
Cumulative Earned Credits	: **20.75**	Cumulative Grade Point Average (CGPA)	: **3.44**

First Year Second Term — **Period** : August 2017 to January 2018

Serial No.	Course No.	Course Title	Credit	Grade Point	Grade
1	Ph 1205	Physics	4.00	2.50	C+
2	Ph 1206	Sessional on Ph 1205	0.75	3.50	A-
3	Hum 1205	Economics and Accounting	3.00	3.00	B
4	Math 1205	Mathematics II	3.00	3.25	B+
5	EE 1205	Electrical Engineering & Electrical Machines	4.00	3.50	A-
6	EE 1206	Sessional on EE 1205	0.75	3.50	A-
7	ME 1209	Engineering Mechanics I	3.00	3.25	B+
8	ME 1210	Sessional on ME 1209	0.75	4.00	A+
9	ME 1200	Mechanical Engineering Drawing	1.50	4.00	A+

Earned Credits	: **20.75**	Grade Point Average (GPA)	: **3.22**
Cumulative Earned Credits	: **41.50**	Cumulative Grade Point Average (CGPA)	: **3.33**

Prepared by : .....

Verified by : .....

Date : November 09, 2022

Controller of Examinations

KHULNA UNIVERSITY OF ENGINEERING & TECHNOLOGY
BANGLADESH

Additional Sheet-2

DETAILS OF ACADEMIC RECORD

Department	: Mechanical Engineering	**Roll No.**	: 1605005
Student's Name	: Sajih Bin Suja	**Session**	: 2017-2018

Second Year First Term — **Period :** January 2018 **to** August 2018

Serial No.	Course No.	Course Title	Credit	Grade Point	Grade
1	Hum 2105	Industrial Environment and Sociology	3.00	3.75	A
2	Math 2105	Mathematics III	3.00	2.50	C+
3	EE 2105	Electronics	3.00	2.50	C+
4	EE 2106	Sessional on EE 2105	0.75	4.00	A+
5	ME 2105	Thermodynamics	4.00	3.00	B
6	ME 2106	Sessional on ME 2105	0.75	3.75	A
7	ME 2113	Fluid Mechanics I	3.00	3.00	B
8	ME 2114	Sessional on ME 2113	0.75	3.25	B+
9	ME 2100	Computer Aided Drawing	1.50	4.00	A+

Earned Credits	: **19.75**	Grade Point Average (GPA)	: **3.11**
Cumulative Earned Credits	: **61.25**	Cumulative Grade Point Average (CGPA)	: **3.26**

Second Year Second Term — **Period :** August 2018 **to** January 2019

Serial No.	Course No.	Course Title	Credit	Grade Point	Grade
1	Math 2205	Mathematics IV	4.00	2.25	C
2	ME 2209	Engineering Mechanics II	3.00	3.00	B
3	ME 2210	Sessional on ME 2209	0.75	3.75	A
4	ME 2211	Mechanics of Solid	4.00	2.50	C+
5	ME 2212	Sessional on ME 2211	0.75	3.25	B+
6	ME 2213	Fluid Mechanics II	3.00	2.75	B-
7	ME 2214	Sessional on ME 2213	0.75	3.00	B
8	ME 2221	Computer Programming	3.00	2.75	B-
9	ME 2222	Sessional on ME 2221	1.50	3.75	A

Earned Credits	: **20.75**	Grade Point Average (GPA)	: **2.78**
Cumulative Earned Credits	: **82.00**	Cumulative Grade Point Average (CGPA)	: **3.14**

Prepared by : .....

Verified by : .....

Date : November 09, 2022

Controlier of Examinations

KHULNA UNIVERSITY OF ENGINEERING & TECHNOLOGY
BANGLADESH

Additional Sheet-3

DETAILS OF ACADEMIC RECORD

Department	: Mechanical Engineering	**Roll No.**	: 1605005
Student's Name	: Sajih Bin Suja	**Session**	: 2018-2019

Third Year First Term — **Period :** February 2019 to August 2019

Serial No.	Course No.	Course Title	Credit	Grade Point	Grade
1	ME 3100	Special Studies	0.75	4.00	A+
2	ME 3105	Heat transfer I	3.00	3.00	B
3	ME 3106	Sessional on ME 3105	0.75	3.75	A
4	ME 3109	Engineering Mechanics -III	3.00	2.50	C+
5	ME 3110	Sessional on ME 3109	0.75	3.50	A-
6	ME 3117	Machine Design- I	3.00	2.25	C
7	ME 3118	Sessional on ME 3117	0.75	3.75	A
8	ME 3119	Statistics & Quality Control	4.00	3.00	B
9	ME 3121	Numerical Computation for Mechanical Engineers	3.00	3.00	B
10	ME 3122	Sessional on ME 3121	0.75	3.75	A

Earned Credits	: **19.75**	Grade Point Average (GPA)	: **2.95**
Cumulative Earned Credits	: **101.75**	Cumulative Grade Point Average (CGPA)	: **3.10**

Third Year Second Term — **Period :** August 2019 to January 2020

Serial No.	Course No.	Course Title	Credit	Grade Point	Grade
1	ME 3200	Mechanical Engineering Project	0.75	3.75	A
2	ME 3205	Heat Transfer II	3.00	2.25	C
3	ME 3206	Sessional on ME 3205	0.75	3.25	B+
4	ME 3215	Engineering Metallurgy	4.00	2.50	C+
5	ME 3216	Sessional on ME 3215	0.75	3.75	A
6	ME 3217	Machine Design II	3.00	2.00	D
7	ME 3218	Sessional on ME 3217	0.75	3.25	B+
8	ME 3223	Power Plant Engineering	4.00	3.00	B
9	ME 3225	Measurement and Industrial Instrumentation	3.00	3.50	A-
10	ME 3226	Sessional on ME 3225	0.75	4.00	A+

Earned Credits	: **20.75**	Grade Point Average (GPA)	: **2.83**
Cumulative Earned Credits	: **122.50**	Cumulative Grade Point Average (CGPA)	: **3.06**

Prepared by : .....

Verified by : .....

Date : November 09, 2022

Controller of Examinations

KHULNA UNIVERSITY OF ENGINEERING & TECHNOLOGY
BANGLADESH

Additional Sheet-4

DETAILS OF ACADEMIC RECORD

Department	: Mechanical Engineering	**Roll No.**	: 1605005
Student's Name	: Sajih Bin Suja	**Session**	: 2019-2020

Fourth Year First Term **Period :** *

Serial No.	Course No.	Course Title	Credit	Grade Point	Grade
1	ME 4000	Project & Thesis I	1.50		X
2	ME 4019	Aerodynamics	3.00	3.50	A-
3	ME 4083	Robotics	3.00	3.00	B
4	ME 4105	Applied Thermodynamics	4.00	3.00	B
5	ME 4106	Sessional on ME 4105	0.75	3.25	B+
6	ME 4113	Fluid Machinery	3.00	3.00	B
7	ME 4114	Sessional on ME 4113	0.75	3.00	B
8	ME 4122	Simulation	0.75	3.75	A
9	ME 4127	Operations Management	3.00	2.50	C+

Earned Credits	: **18.25**	Grade Point Average (GPA)	: **3.04**
Cumulative Earned Credits	: **140.75**	Cumulative Grade Point Average (CGPA)	: **3.05**

N.B. : ME 4000 will be evaluated at the end of 4th Year 2nd Term.

Fourth Year Second Term **Period :** *

Serial No.	Course No.	Course Title	Credit	Grade Point	Grade
1	ME 4000	Project & Thesis II	3.00+1.50=4.50	4.00	A+
2	ME 4207	Tool Engineering & Machine Tools	3.00	3.25	B+
3	ME 4208	Sessional on ME 4207	0.75	4.00	A+
4	ME 4229	Industrial Management & Professional Ethics	3.00	3.75	A
5	ME 4015	Automobile Engineering	3.00	3.50	A-
6	ME 4017	Refrigeration & Air Conditioning	3.00	3.25	B+
7	ME 4021	Flight Dynamics	3.00	3.75	A

Earned Credits	: **20.25**	Grade Point Average (GPA)	: **3.63**
Cumulative Earned Credits	: **161.00**	Cumulative Grade Point Average (CGPA)	: **3.13**

N.B. : ME 4000 continued from previous Term.

* Due to Covid-19 situation, both terms ran together which started on February 2020 and ended on March 2022 for session 2019-2020.

Prepared by : .....

Verified by : .....

Date : November 09, 2022

Controller of Examinations