

**Ashutosh Mukherjee**

born on September 10, 1998

in Panchkula, Haryana

has passed the **Master Examination**

in accordance with the provisions  
of the syllabus for **Computer Aided Conception  
and Production in Mechanical  
Engineering**

and has obtained the overall mark **good (1.6)**

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Master Thesis		Credits	Mark
Topic of Master Thesis	Distributed data fusion and control over a network of unmanned aerial vehicles	30.00	very good (1.3)
Examiner	Univ.-Prof. Dr.-Ing. Dieter Moormann		

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Aachen, April 03, 2024

Chair of the Examination Board

  
Univ.-Prof. Dr.-Ing. Dr. h. c. (UPT) Burkhard Corves



**Ashutosh Mukherjee**, born on September 10, 1998 in Panchkula, Haryana  
has achieved the following individual results:

	Credits	Mark
<b>Track Conception</b>	<b>75.00</b>	<b>good (1.8)</b>
<b>Compulsory Courses</b>	<b>48.00</b>	<b>good (1.6)</b>
Advanced Finite Element Methods for Engineers	5.00	good (1.7)
Advanced Software Engineering	5.00	very good (1.3)
Artificial Neural Networks in Structural Mechanics	6.00	good (2.0)
Computational Intelligence in Engineering	5.00	good (1.7)
Continuum Mechanics	5.00	good (1.7)
Failure of Structures and Structural Elements	5.00	good (2.0)
Multibody Dynamics	5.00	very good (1.0)
Nonlinear Structural Mechanics	5.00	very good (1.0)
Numerical Methods in Mechanical Engineering	7.00	good (2.0)
<b>Compulsory Elective Area I</b>	<b>4.00</b>	<b>good (2.0)</b>
Computational Fluid Dynamics I	4.00	good (2.0)
<b>Compulsory Elective Area II</b>	<b>23.00</b>	<b>good (2.4)</b>
Finite Element Methods in Lightweight Design	5.00	satisfactory (3.3)
Advanced Control Systems	4.00	very good (1.0)
Nonlinear Control	4.00	good (2.0)
Intelligent Monitoring of Engineering Systems	5.00	good (1.7)
Tensor Algebra and Tensor Analysis for Engineers I	5.00	sufficient (3.7)
<b>Elective Area Internship or Research Project</b>	<b>9.00</b>	<b>very good (1.3)</b>
Mini Thesis	9.00	very good (1.3)
<b>Language Courses</b>	<b>6.00</b>	<b>passed</b>
<b>Language Course I</b>	<b>2.00</b>	<b>passed</b>
RWTH German Course A1.1.b	2.00	passed
<b>Language Course II</b>	<b>2.00</b>	<b>passed</b>
RWTH German Course A1.2.g (Intensive Course lecture-free period) (online)	2.00	passed
<b>Linguistic Elective</b>	<b>2.00</b>	<b>passed</b>
RWTH German Course A2.b (face-to-face course)	2.00	passed

**Ashutosh Mukherjee**, born on September 10, 1998 in Panchkula, Haryana  
has achieved the following individual results:

This certificate has also been issued in a German version.

A credit point represents an estimated workload of approximately 30 hours.

# Urkunde Certificate

# RWTH AACHEN UNIVERSITY

**Die Fakultät für Maschinenwesen**

The Faculty of Mechanical Engineering

**verleiht**

awards

**Ashutosh Mukherjee**

**geboren am**

**10. September 1998**

born on

September 10, 1998

in Panchkula, Haryana

**aufgrund der abgeschlossenen Masterprüfung im  
Studiengang**

on the basis of the completed Master Examination

**COMPUTER AIDED CONCEPTION AND PRODUCTION  
IN MECHANICAL ENGINEERING**

COMPUTER AIDED CONCEPTION AND PRODUCTION  
IN MECHANICAL ENGINEERING

**den akademischen Grad**

the academic degree

**MASTER OF SCIENCE  
RWTH AACHEN UNIVERSITY  
(M. Sc. RWTH)**

**Aachen,**

**den 3. April 2024**

April 3, 2024

Univ.-Prof. Dr.-Ing. Wolfgang Schröder

Der Dekan der Fakultät

Dean of the Faculty

Univ.-Prof. Dr.-Ing. Dr. h. c. (UPT)  
Burkhard Corves

Der Vorsitzende des  
Prüfungsausschusses

Chairman of the Examination Board





# PUNJAB ENGINEERING COLLEGE, CHANDIGARH

(Deemed to be University)

(Formerly PEC University of Technology)

## Transcript of Academic Record for Bachelor of Technology

Student ID: 16107042

Student's Name: ASHUTOSH MUKHERJEE

Department: MECHANICAL ENGINEERING

Father's Name: AMIT KUMAR MUKHOPADHYAY

Mother's Name: SOMA MUKHOPADHYAY

Year of Admission: 2016

### Semester: 16171

Course ID	Course Name	Credits	Grade
GSN101	INTRODUCTION TO ENVIRONMENTAL SCIENCES	4	B+
HSS101	ETHICS & SELF AWARENESS	2	A+
MAN101	MATHEMATICS-I	4	B+
MEN101	INTRODUCTION TO MECHANICAL ENGINEERING	2	B+
PYN105	MECHANICS	4	B+

SGPA: 8.2 Credits Earned: 16 Honours Credits: 0

CGPA: 8.2 Credits Earned: 16 Honours Credits: 0

### Semester: 16172

Course ID	Course Name	Credits	Grade
CHN101	APPLIED CHEMISTRY	4	C+
CSN104	COMPUTER PROGRAMMING BASIC	4	B+
HSS103	COMMUNICATION SKILLS ADVANCED	2	B+
MAN106	PARTIAL DIFFERENTIAL EQUATION & SPECIAL FUNCTIONS	4	B
MEN102	ELEMENTS OF MANUFACTURING PROCESSES	4	B
MEN103	ENGINEERING AND MACHINE DRAWING	4	C+
NSN101	NSS	2	A+

SGPA: 7.2 Credits Earned: 24 Honours Credits: 0

CGPA: 7.6 Credits Earned: 40 Honours Credits: 0

### Semester: 17181

Course ID	Course Name	Credits	Grade
ESC203	MATERIAL SCIENCE	4	A
ESC206	BASICS OF ELECTRICAL SCIENCES	4	B+
HSS201	ECONOMICS	3	A
MEN201	ELEMENT OF THERMODYNAMICS	4	B+
MEN202	KINEMATICS OF MACHINE	4	C+
MEN203	MANUFACTURING PROCESS	4	B
MEN204	STRENGTH OF MATERIALS & BASIC CONCEPTS OF DESIGN	4	B+

SGPA: 7.8 Credits Earned: 27 Honours Credits: 0

CGPA: 7.7 Credits Earned: 67 Honours Credits: 0

### Semester: 17182

Course ID	Course Name	Credits	Grade
ESC102	FLUID MECHANICS	4	B
MEN205	TECHNICAL COMMUNICATION	2	B+
MEN206	ENGINEERING ANALYSIS & DESIGN	4	B+
MEN207	DYNAMICS OF MACHINES	4	C+
MEN208	MECHANICS OF MATERIALS	4	B+
MEN209	APPLIED THERMODYNAMICS	4	B+
MEN210	REFRIGERATION & AIR CONDITIONING	4	B+
MEN221	EDUCATIONAL TOUR	0	S

SGPA: 7.5 Credits Earned: 26 Honours Credits: 0

CGPA: 7.6 Credits Earned: 93 Honours Credits: 0

### Semester: 18191

Course ID	Course Name	Credits	Grade
MEN301	PRODUCTION ENGINEERING	4	A
MEN302	HEAT TRANSFER	4	A
MEN303	DESIGN OF MECHANICAL SYSTEM	4	A+
MEN304	MECHANICAL VIBRATION	4	A+
MEN305	CADD & M	4	A
MEN321	MINOR PROJECT	4	A

SGPA: 9.3 Credits Earned: 24 Honours Credits: 0

CGPA: 8 Credits Earned: 117 Honours Credits: 0

### Semester: 18192

Course ID	Course Name	Credits	Grade
MEN331	INTERNSHIP- INDUSTRIAL COORDINATOR-I	6	A+
MEN332	INTERNSHIP- INDUSTRIAL COORDINATOR-II	6	A+
MEN333	INTERNSHIP- FACULTY COORDINATOR-I	2	A+
MEN334	INTERNSHIP- FACULTY COORDINATOR-II	2	A+
MEN335	INTERNSHIP-FINAL REPORT, PRESENTATION & VIVA-VOCE	4	A+

SGPA: 10 Credits Earned: 20 Honours Credits: 0

CGPA: 8.3 Credits Earned: 137 Honours Credits: 0

### Semester: 19201

Course ID	Course Name	Credits	Grade
DEC101	DISCIPLINE	2	A+
MAN401	OPERATION RESEARCH	4	A+

### Semester: 19202

Course ID	Course Name	Credits	Grade
HSM402	BUSINESS ENVIRONMENT AND BUSINESS LAWS	3	Y



MEN414	POWER PLANT ENGINEERING (ELECT-I)	4	C+
MEN415	INDUSTRIAL AUTOMATION & ROBOTICS (ELECT-II)	4	A
MEN441	CAPSTONE PROJECT	2	A
PRO201	SPEAKER ASSOCIATION & STUDY CIRCLE	2	A

SGPA: 8.8 Credits Earned: 18 Honours Credits: 0  
 CGPA: 8.3 Credits Earned: 155 Honours Credits: 0

MEN401	PRODUCTION & OPERATION MANAGEMENT	4	Y
MEN451	MAJOR PROJECT	6	Y

SGPA: 0 Credits Earned: 13 Honours Credits: 0  
 CGPA: 8.3 Credits Earned: 168 Honours Credits: 0

The student has completed the programme.

*Kamalyo*

CHECKED BY

FOR CONTROLLER OF EXAMINATION

Place: Chandigarh, India  
 Date: Wednesday, June 17, 2020

1. The medium of instruction has been ENGLISH throughout.
2. In the semester code, the first four digits signify the academic session while the last digit stands for the semester. For example, semester 11121 signifies first semester of session 2011-12.
3. System of Grading

i. The performance of a student in a course is reported in terms of the following grades and grade points:

Letter Grade	Performance	Grade Points
A+	Outstanding	10
A	Excellent	9
B+	Very Good	8
B	Good	7
C+	Average	6
C	Below Average	5
D	Poor	4
S	Satisfactory	-
Y	Satisfactory (Covid-19 semester)	-
F	Fail	-
I	Incomplete	-
N	Not Eligible	-

- ii. The performance of a particular semester is expressed in terms of the Semester Grade Point Average (SGPA) while the overall performance is given in terms of Cumulative Grade Point Average (CGPA), of all semesters.
- iii. The university does not have a system of ranking students.
- iv. A CGPA of 6.0 or higher is considered to be first division (greater than 60% marks).
- v. Due to COVID-19, SGPA of 8th semester be considered equivalent to CGPA upto 7th semester.



EXPLORE • INNOVATE • EXCEL

Student ID : 16107042  
Serial No. : D200522



**Punjab Engineering College**  
(Deemed to be University)  
**Chandigarh**

On recommendation of the Senate, the Institute hereby confers the degree of

*Bachelor of Technology*  
in  
*Mechanical Engineering*  
on

**Ashutosh Mukherjee**

who has successfully completed in the year 2020 the requirements for the award of this degree

**with CGPA of 8.3**

Given this day, 07<sup>th</sup> of November, 2020 under the seal of the Institute at Chandigarh

*Anshu*  
Registrar

*Anj Singh*  
Director

*[Signature]*  
Chairman Board of Governors