

गुरु घासीदास विश्वविद्यालय
(केन्द्रीय विश्वविद्यालय अधिनियम 2009 क्र. 25 के अंतर्गत स्थापित केन्द्रीय विश्वविद्यालय)
कोनी, बिलासपुर - 495009 (छ.ग.)



Guru Ghasidas Vishwavidyalaya
(A Central University Established by the Central Universities Act 2009 No. 25 of 2009)
Koni, Bilaspur - 495009 (C.G.)

Department :		Industrial and Production Engineering
Academic Year : 2024-25		
Sr. No.	Programme Code	Name of the Programme
01.	IP208PPR02	B.Tech.


HOD
विभागाध्यक्ष / Head
औद्योगिक एवं उत्पादन अभियंत्रिकी
Industrial & Production Engineering
प्रौद्योगिकी संस्थान / Engineering & Technology
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

Signature and Seal of the Head



PROJECT REPORT

On

**"Investigating Challenges Towards E-Waste Recycling:
E-Waste Management for Sustainable Tomorrow"**

Submitted in the partial fulfilment for the award of the

Degree of Bachelor of Technology

In

Industrial and Production Engineering

By

Name: Aditya Jha (21033101)

Jangam Hemima Blessy (21033114)

B. Tech. VIII Semester

Under the guidance of

Name of faculty: Atul Kumar Sahu

Designation: Assistant Professor



**Department of Industrial & Production Engineering
School of Studies of Engineering & Technology
Guru Ghasidas Vishwavidyalaya (Central
University) Bilaspur (C.G.) - 495009
Session 2024-25**



Department of Industrial & Production Engineering
Institute of Technology, Guru Ghasidas Vishwavidyalaya



CERTIFICATE OF SUPERVISOR

This is to certify that the work incorporated in the project

**"Investigating Challenges Towards E-Waste Recycling:
E-Waste Management for Sustainable Tomorrow"**

Record of research work carried out by **Aditya Jha and Jangam Hemima Blessy** bearing **GGV/21/01301** and **GGV/21/01314** respectively. Under my guidance and supervision for the award of Degree of Technology in the School of Studies, Engineering and Technology, Guru Ghasidas Vishwavidyalaya, Bilaspur, (C.G.), India. To the best of my knowledge and belief: -

- Embodies the work of the candidate himself.
- Has duly been completed.
- Fulfils the ordinance requirement relating to the University's Bachelor of Engineering.
- Is up to the desired standard regarding content and language for being referred to the examiners.

Atul Kumar Sahu

Assistant Professor

Department of Industrial & Production Engineering



ACKNOWLEDGEMENT

We are highly indebted to **Atul Kumar Sahu** for his guidance and constant supervision as well as for providing necessary information regarding the project, and also for his support in the project. We own our special thanks to our Head of Department, **Dr. Mukesh Kumar Singh**, Professor, for encouraging us to acquire courage and knowledge through this project. We would like to express our gratitude towards our parents and faculty members of the Department of Industrial and Production Engineering, School of Studies in Engineering & Technology, Guru Ghasidas Vishwavidyalaya, Bilaspur, C.G., for their kind cooperation and encouragement, which helped us in the completion of this project. We would like to express our special gratitude and thanks to all the staff of the Industrial and Production Engineering department for giving us such attention and time. Our thanks and appreciation also go to our colleagues in developing the project and the people who have willingly helped us out with their abilities.

Sign: *Aditya*

Sign: J. Hemima Blessy

Roll No.: 21033101
Enrolment No.: GGV/21/01301

Roll No.: 21033114
Enrolment No.: GGV/21/01314



CERTIFICATE FROM THE EXAMINERS

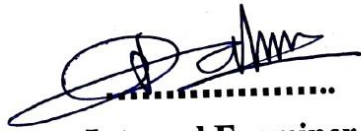
This is to certify that the project work entitled:

**“Investigating Challenges Towards E-Waste Recycling:
E-Waste Management for Sustainable Tomorrow”**

Submitted by:

Name	Roll No.	Enrolment No.
Aditya Jha	21033101	GGV/21/01301
Jangam Hemima Blessy	21033114	GGV/21/01314

Have been examined by the undersigned as part of the examination for the award Bachelor of Technology degree in Industrial & Production Engineering of the School of Studies in Engineering & Technology, Guru Ghasidas Vishwavidyalaya, (A Central University, NAAC A⁺⁺), Bilaspur, (C.G.).


.....

Internal Examiner

Date:

.....
External Examiner

Date:

Head of Department

Date:



Project Report

On

**“Friction Stir Welding: The Disruptive Technology Driving
Lightweight, High-Strength, and Sustainable Manufacturing”**

Submitted in partial fulfilment for the award of the

Degree of Bachelor of Technology

In

Industrial and Production Engineering

By

Ajay Kumar Singh (21033102)

Joyous Guria (21033115)

B.Tech VIII Semester

Under the guidance of

Mr. Kawal Lal Kurrey

Assistant Professor



**Department of Industrial & Production Engineering
School of Studies of Engineering & Technology
Guru Ghasidas Vishwavidyalaya (A Central University)**

Bilaspur (C.G.) - 495009

Session 2024-25



Department of Industrial & Production Engineering

School of Studies of Engineering & Technology
Guru Ghasidas Vishwavidyalaya



CERTIFICATE OF SUPERVISOR

This is to certify that the work incorporated in the project

“Friction Stir Welding: The Disruptive Technology Driving Lightweight, High-Strength, and Sustainable Manufacturing”

Record of research work carried out by Ajay Kumar Singh and Joyous Guria bearing Enrolment No. GGV/21/01302 & GGV/21/01315 respectively. Under my guidance and supervision for the award of Degree Bachelor of Technology in the School of Studies, Engineering and Technology, Guru Ghasidas Vishwavidyalaya, Bilaspur, (C.G.), India. To the best of my knowledge and belief: -

- Embodies the work of the candidate himself.
- Has duly been completed.
- Fulfils the ordinance requirement relating to the University's Bachelor of Technology.
- Is up to the desired standard regarding content and language for being referred to the examiners.


.....
Signature of Supervisor


Department of Industrial & Production Engineering



ACKNOWLEDGEMENT

We are highly indebted to **Mr. Kawal Lal Kurrey** for his guidance and constant supervision as well as for providing necessary information regarding the project, and also for his support in the project. We owe our special thanks to our Head of Department, **Prof. Mukesh Kumar Singh**, Professor, for encouraging us to acquire courage and knowledge through this project. We would like to express our gratitude towards our parents and faculty members of the Department of Industrial and Production Engineering, School of Studies of Engineering & Technology, Guru Ghasidas Vishwavidyalaya, Bilaspur, C.G., for their kind cooperation and encouragement, which helped us in the completion of this project. We would like to express our special gratitude and thanks to all the staff of the Industrial and Production Engineering department for giving us such attention and time. Our thanks and appreciation also go to our colleagues in developing the project and the people who have willingly helped us out with their abilities.


Ajay Kumar Singh
Roll No.- 21033102
Enrolment No.- GGV/21/01302


Joyous Guria
Roll No.- 21033115
Enrolment No.- GGV/21/01315



CERTIFICATE FROM THE EXAMINERS


This is to certify that the project work entitled:


**“Friction Stir Welding: The Disruptive Technology Driving
Lightweight, High-Strength, and Sustainable Manufacturing”**

Submitted by:

Name	Roll No.	Enrolment No.
Ajay Kumar Singh	21033102	GGV/21/01302
Joyous Guria	21033115	GGV/21/01315

Have been examined by the undersigned as part of the examination for the award
Bachelor of Technology degree in Industrial & Production Engineering of the School
of Studies in Engineering & Technology, Guru Ghasidas Vishwavidyalaya, (A Central
University, NAAC A⁺⁺), Bilaspur, C.G Bilaspur (C.G.).

.....

Internal Examiner
Date:

.....

External Examiner
Date:

.....

Head of Department
विभागाध्यक्ष/Head
औद्योगिक एवं उत्पादन अभियंत्रिकी
Industrial & Production Engineering
प्रौद्योगिकी संस्थान/Engineering & Technology
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)



Project Report

On

**"E-commerce platforms: Performance, Digital Marketing and
Supply Chain capabilities"**

Submitted in partial fulfilment for the award of the

Degree of Bachelor of Technology

In

Industrial and Production Engineering

By

Akshat Dubey (21033103)

Krishna Goyal (21033119)

B.Tech VIII Semester

Under the guidance of

Dr. Nitin Kumar Sahu

Assistant professor



**Department of Industrial & Production Engineering
School of Studies of Engineering & Technology
Guru Ghasidas Vishwavidyalaya (Central University)
Bilaspur (C.G.) - 495009
Session 2024-25**



Department of Industrial & Production Engineering

Institute of Technology, Guru Ghasidas Vishwavidyalaya



CERTIFICATE OF SUPERVISOR

This is to certify that the work incorporated in the project

"E- Commerce Platforms: Performance, Digital Marketing and supply chain capabilities"

Record of research work carried out by Akshat Dubey and Krishna Goyal bearing Enrolment No. GGV/21/01303 and GGV/21/01319 respectively. Under my guidance and supervision for the award of Degree of Technology in the School of Studies, Engineering and Technology, Guru Ghasidas Vishwavidyalaya, Bilaspur, (C.G.), India. To the best of my knowledge and belief: -

- Embodies the work of the candidate himself.
- Has duly been completed.
- Fulfils the ordinance requirement relating to the University's Bachelor of Engineering.
- Is up to the desired standard regarding content and language for being referred to the examiners.

Dr. Nitin Kumar Sahu

Assistant Professor

Department of Industrial & Production Engineering



ACKNOWLEDGEMENT

We are highly indebted to **Dr. Nitin Kumar Sahu** for his/her guidance and constant supervision as well as for providing necessary information regarding the project, and also for his/her support in the project. We owe our special thanks to our Head of Department, **Dr. Mukesh Kumar Singh**, Professor, for encouraging us to acquire courage and knowledge through this project. We would like to express our gratitude towards our parents and faculty members of the Department of Industrial and Production Engineering, School of Studies in Engineering & Technology, Guru Ghasidas Vishwavidyalaya, Bilaspur, C.G., for their kind cooperation and encouragement, which helped us in the completion of this project. We would like to express our special gratitude and thanks to all the staff of the Industrial and Production Engineering department for giving us such attention and time. Our thanks and appreciation also go to our colleagues in developing the project and the people who have willingly helped us out with their abilities.

Sign:

Roll No.- 21033103
Enrolment No.- GGV/21/01303

Sign:

Roll No.- 21033119
Enrolment No.- GGV/21/01319



CERTIFICATE FROM THE EXAMINERS

This is to certify that the project work entitled:

"E-commerce platforms: Performance, Digital marketing and supply chain capabilities"


Submitted by:

Name	Roll No.	Enrolment No.
Akshat Dubey.	21033103.	GGV/21/01301
Krishna Goyal.	21033119.	GGV/21/01319

Have been examined by the undersigned as part of the examination for the award Bachelor of Technology degree in Industrial & Production Engineering of the School of Studies in Engineering & Technology, Guru Ghasidas Vishwavidyalaya, (A Central University, NAAC A⁺⁺), Bilaspur, C.G Bilaspur (C.G.).


.....
Internal Examiner

Date:


.....
External Examiner
26/11/25

Date:


20/11/25
Head of Department

Date:

विभागाध्यक्ष/Head
औद्योगिक एवं उत्पादन अभियांत्रिकी
Industrial & Production Engineering
प्रौद्योगिकी संस्थान/Engineering & Technology
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.),



Project Report

On

**“TOTAL QUALITY MANAGEMENT IN MANUFACTURING
INDUSTRY”**

Submitted in the partial fulfilment for the award of the

Degree of Bachelor of Technology

In

Industrial and Production Engineering

By

ISHWAR 21033113

AYUSH SHARMA 21033104

B-Tech VIII Semester

Under the guidance of

Mr. SOMNATH SINGROUL

ASSISTANT PROFESSOR



Department of Industrial & Production Engineering
School of Studies of Engineering & Technology
Guru Ghasidas Vishwavidyalaya (Central University)
Bilaspur (C.G.) - 495009
Session – 2024-25



Department of Industrial & Production engineering
Institute of Technology, Guru Ghasidas Vishwavidyalaya
Bilaspur (C.G.) -495009



CERTIFICATE OF SUPERVISOR

This is to certify that the work incorporated in the project

“TOTAL QUALITY MANAGEMENT IN MANUFACTURING INDUSTRY”

Record of research work carried out by **ISHWAR, AYUSH SHARMA** bearing 21033113, 21033104 respectively. Under my guidance and supervision for the award of Degree of technology in the Faculty of Engineering, Institute of Technology Guru Ghasidas Vishwavidyalaya, Bilaspur, (CG) India. To the best of my knowledge and believe: -

- Embodies the work of the candidate himself.
- Has duly been completed.
- Fulfils the requirement of ordinance relating to the Bachelor of Engineering of the University.
- Is up to the desired standard both in respect of contents and language for being referred to the examiners.


Mr. SOMNATH SINGROUL

Assistant Professor
Industrial & Production Engineering



ACKNOWLEDGEMENT

We would like to extend our heartfelt appreciation to everyone who has involved in the successful completion of this project. We would like to express our sincere gratitude to our project guide **Mr. SOMNATH SINGROUL** (Assistant Professor) of the Department of Industrial & Production Engineering, School of Studies of Engineering & Technology, Guru Ghasidas Vishwavidyalaya, for his/her constant guidance, motivation, and valuable feedback throughout the project. His/her Her expertise and dedication have been instrumental in helping us achieve our goals.

We would also like to thank our institution for providing us with the necessary resources and facilities that have made this project possible. Finally, we would like to express our appreciation to each other for our hard work, commitment, and cooperation. It has been an amazing experience working together as a team, and we are proud of what we have accomplished. Thank you all for your contributions to this project.

Date- 28/04/25

Sign: <i>ISHWAR</i> ISHWAR	Sign: <i>AYUSH SHARMA</i> AYUSH SHARMA
Roll No.-21033113 Enrolment No.-GGV/21/01313	Roll No.-21033104 Enrolment No.-GGV/21/01304



CERTIFICATE BY THE EXAMIBERS

This is to certify that project work entitled:

“TOTAL QUALITY MANAGEMENT IN MANUFACTURING INDUSTRY”

Submitted by:

Name	Roll No.	Enrolment No.
ISHWAR	21033113	GGV/21/01313
AYUSH SHARMA	21033104	GGV/21/01304

Have been examined by the undersigned as a part of examination for the award Bachelor of Technology degree in Industrial & Production Engineering of Institute of Technology Guru Ghasidas Vishwavidyalaya (A Central University) Bilaspur (C.G.).



Internal Examiner

Date: 28/04/25



External Examiner

Date:


28/4/25
Head of Department

Date:

गुरु घासीदास विश्वविद्यालय
(केन्द्रीय विश्वविद्यालय अधिनियम 2009 क्र. 25 के अंतर्गत स्थापित केन्द्रीय विश्वविद्यालय)
कोनी, बिलासपुर - 495009 (छ.ग.)



Guru Ghasidas Vishwavidyalaya
(A Central University Established by the Central Universities Act 2009 No. 25 of 2009)
Koni, Bilaspur - 495009 (C.G.)

A Thesis

on

Psychology of Indian consumers on luxury goods market

Submitted in the partial fulfilment for the award of the

Degree of

Bachelor of Technology

in

Industrial and Production Engineering

by

Bhumitra Chauhan (Roll no.21033105)

B. Tech VII Semester

Under the guidance of

Mr. Anurag Singh

Assistant Professor



Department of Industrial & Production Engineering

School of Studies of Engineering & Technology

Guru Ghasidas Vishwavidyalaya (A Central University)

Bilaspur (C.G.) - 495009

April - 2025

गुरु घासीदास विश्वविद्यालय
(केन्द्रीय विश्वविद्यालय अधिनियम 2009 क्र. 25 के अंतर्गत स्थापित केन्द्रीय विश्वविद्यालय)
कोनी, बिलासपुर - 495009 (छ.ग.)



Guru Ghasidas Vishwavidyalaya
(A Central University Established by the Central Universities Act 2009 No. 25 of 2009)
Koni, Bilaspur - 495009 (C.G.)

A Thesis
on
Psychology of Indian consumers on luxury goods market
Submitted in the partial fulfilment for the award of the
Degree of
Bachelor of Technology
in
Industrial and Production Engineering
by
Bhumitra Chauhan (Roll no.21033105)

B. Tech VII Semester
Under the guidance of

Mr. Anurag Singh
Assistant Professor



Department of Industrial & Production Engineering
School of Studies of Engineering & Technology
Guru Ghasidas Vishwavidyalaya (A Central University)
Bilaspur (C.G.) - 495009
April - 2025



ACKNOWLEDGEMENT

We would like to extend our heartfelt appreciation to everyone who has involved in the successful completion of this project. We would like to express our sincere gratitude to our project guide **Mr. Anurag Singh** (Assistant Professor) of the Department of Industrial & Production Engineering, School of Studies of Engineering & Technology, Guru Ghasidas Vishwavidyalaya, for his constant guidance, motivation, and valuable feedback throughout the project. His expertise and dedication have been instrumental in helping us achieve our goals. We would also like to thank our institution for providing us with the necessary resources and facilities that have made this project possible. Finally, we would like to express our appreciation to each other for our hard work, commitment, and cooperation. It has been an amazing experience working together as a team, and we are proud of what we have accomplished. Thank you all for your contributions to this project.

Sign: **Bhumitra Chauhan**

Roll no. **21033105**
Enrollment no. **GGV/21/01305**



CERTIFICATE FROM THE EXAMINERS

This is to certify that the project work entitled:

“Psychology of Indian consumers on luxury goods market”

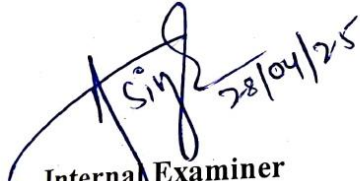
Submitted by:


Name
Bhumitra Chauhan

Roll no.
21033105

Enrollment no.
GGV/21/01305

Have been examined by the undersigned as part of the examination for the award Bachelor of Technology degree in Industrial & Production Engineering of the School of Studies in Engineering & Technology, Guru Ghasidas Vishwavidyalaya, (A Central University, NAAC A++), Bilaspur, C.G Bilaspur (C.G.).


Internal Examiner
Date: 28/04/25


External Examiner
Date:


Head of Department
विभागाध्यक्ष/Head
औद्योगिक एवं उत्पादन अभियंत्रिकी
Date: 28/04/25
Industrial & Production Engineering
प्रौद्योगिकी संस्थान/Engineering & Technology
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.).



Major Project Thesis Report

On

**Impact of Covid- 19 on Healthcare: FMECA Approach to
Crisis Management**

Submitted in partial fulfilment for the award of the

Degree of Bachelor of Technology

In

Industrial and Production Engineering

By

Digvijay Pundir (21033108)

Bhawna (21033133)

B.Tech VIII Semester

Under the guidance of

Mr. Anurag Singh
Assistant Professor



Department of Industrial & Production Engineering
School of Studies of Engineering & Technology
Guru Ghasidas Vishwavidyalaya (Central University)

Bilaspur (C.G.) - 495009

Session 2024-25



Major Project Thesis Report
On
**Impact of Covid- 19 on Healthcare: FMECA Approach to
Crisis Management**

Submitted in partial fulfilment for the award of the
Degree of Bachelor of Technology
In

Industrial and Production Engineering

By

Digvijay Pundir (21033108)

Bhawna (21033133)

B.Tech VIII Semester

Under the guidance of

Mr. Anurag Singh
Assistant Professor



Department of Industrial & Production Engineering
School of Studies of Engineering & Technology
Guru Ghasidas Vishwavidyalaya (Central University)
Bilaspur (C.G.) - 495009
Session 2024-25



Department of Industrial & Production Engineering
School of Studies of Engineering and Technology,
Guru Ghasidas Vishwavidyalaya



CERTIFICATE OF SUPERVISOR

This is to certify that the work incorporated in the project
**Impact of Covid - 19 on Healthcare : FMECA Approach to Crisis
Management**

Record of research work carried out by **Digvijay Pundir (Enrolment No.-GGV/21/01308)**
& **Bhawna (Enrolment No.- GGV/21/01333)** . respectively. Under my guidance and
supervision for the award of Degree of Technology in the School of Studies, Engineering and
Technology, Guru Ghasidas Vishwavidyalaya, Bilaspur, (C.G.), India. To the best of my
knowledge and belief: -

- Embodies the work of the candidate himself.
- Has duly been completed.
- Fulfils the ordinance requirement relating to the University's Bachelor of Engineering.
- Is up to the desired standard regarding content and language for being referred to the examiners.

ASD
28/04/25
Assistant Professor

Department of Industrial & Production Engineering



CERTIFICATE FROM THE EXAMINERS

This is to certify that the project work entitled:

“Impact of Covid- 19 on Healthcare: FMECA Approach to Crisis Management”


Submitted by:

Name
Digvijay Pundir
Bhawna


Roll No.
21033108
21033133

Enrolment No.
GGV/21/01308
GGV/21/01333

Have been examined by the undersigned as part of the examination for the award Bachelor of Technology degree in Industrial & Production Engineering of the School of Studies in Engineering & Technology, Guru Ghasidas Vishwavidyalaya, (A Central University, NAAC A⁺⁺), Bilaspur, C.G Bilaspur (C.G.).


.....
Internal Examiner

Date:


.....
External Examiner

Date:


.....
Head of Department
विभागाध्यक्ष / Head
औद्योगिक एवं उत्पादन अभियांत्रिकी
Industrial & Production Engineering
प्रौद्योगिकी संस्थान / Engineering & Technology
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)



{Major Project Report}

On

“Productivity Enhancements in Manufacturing Industry: -A case study for successful implementation”

Submitted in partial fulfilment for the award of the
Degree of Bachelor of Technology

In

Industrial and Production Engineering

By

Pranav Kumar Sharma(21033123)

Twinkle Paikra(21033127)

Maimuna Ishrat (20105017)

B.Tech-VIII Semester

Under the guidance of

Name of faculty: -Mrs. Arpita Roy Choudhury

Designation: -Assistant professor



**Department of Industrial & Production Engineering
School of Studies of Engineering & Technology
Guru Ghasidas Vishwavidyalaya (Central University)
Bilaspur (C.G.) – 495009
Session 2024-25**



Department of Industrial & Production Engineering
Institute of Technology, Guru Ghasidas Vishwavidyalaya



CERTIFICATE OF SUPERVISOR

This is to certify that the work incorporated in the project

“Productivity Enhancements in Manufacturing Industry: -A case study for successful implementation”

Record of research work carried out by **Pranav Kumar Sharma, Twinkle Paikra, Maimuna Ishrat** bearing Enrolment No. respectively. Under my guidance and supervision for the award of Degree of Technology in the School of Studies, Engineering and Technology, Guru Ghasidas Vishwavidyalaya, Bilaspur, (C.G.), India. To the best of my knowledge and belief: -

- Embodies the work of the candidate himself.
- Has duly been completed.
- Fulfils the ordinance requirement relating to the University's Bachelor of Engineering.
- Is up to the desired standard regarding content and language for being referred to the examiners.

Mrs. Arpita Roy Choudhury

Assistant Professor



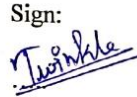
Department of Industrial & Production Engineering

ACKNOWLEDGEMENT

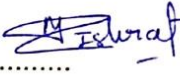
We are highly indebted to Mrs. Arpita Roy Choudhury for his/her guidance and constant supervision as well as for providing necessary information regarding the project, and for his/her support in the project. We owe our special thanks to our Head of Department, Dr. Mukesh Kumar Singh, Professor, for encouraging us to acquire courage and knowledge through this project. We would like to express our gratitude towards our parents and faculty members of the Department of Industrial and Production Engineering, School of Studies in Engineering & Technology, Guru Ghasidas Vishwavidyalaya, Bilaspur, C.G., for their kind cooperation and encouragement, which helped us in the completion of this project. We would like to express our special gratitude and thanks to all the staff of the Industrial and Production Engineering department for giving us such attention and time. Our thanks and appreciation also go to our colleagues in developing the project and the people who have willingly helped us out with their abilities.

Sign: 

Roll No.-21033123
Enrolment No.-GGV/21/01323

Sign: 

Roll No.-21033127
Enrolment No.-GGV/21/10327

Sign: 

Roll No.-20105017
Enrolment No.
GGV/20/01319



CERTIFICATE FROM THE EXAMINERS

This is to certify that the project work entitled:

“Productivity Enhancements in Manufacturing Industry: - A case study for successful implementation”

Submitted by:

Name	Roll No.	Enrolment No.
Pranav Kumar Sharma	21033123	GGV/21/01323
Twinkle Paikra	21033127	GGV/21/01327
Maimuna Ishrat	20105017	GGV/20/01319

Have been examined by the undersigned as part of the examination for the award Bachelor of Technology degree in Industrial & Production Engineering of the School of Studies in Engineering & Technology, Guru Ghasidas Vishwavidyalaya, (A Central University, NAAC A⁺⁺), Bilaspur, C.G Bilaspur (C.G.).

[Handwritten Signature]

Internal Examiner

Date: 28/04/2025

External Examiner

Date:

[Handwritten Signature]
28/4/25

Head of Department



Project Report

On

**“Integrating Lean Manufacturing and Digitalization: A
Strategic Framework for Enhancing Operational Excellence in
Industry 4.0”**

Submitted in partial fulfillment for the award of the

Degree of Bachelor of Technology

In

Industrial & Production Engineering

By

Name: Mohd Sarikh Ameer (21033134)

Md Zeeshan (21033122)

B.Tech VIII Semester

Under the guidance of

Prof. Mukesh Kumar Singh

Professor & Head



**Department of Industrial & Production Engineering
School of Studies of Engineering & Technology
Guru Ghasidas Vishwavidyalaya (Central University)
Bilaspur (C.G.) - 495009
Session 2024-25**



Department of Industrial & Production Engineering
Institute of Technology, Guru Ghasidas Vishwavidyalaya



CERTIFICATE OF SUPERVISOR

This is to certify that the work incorporated in the project

**“Integrating Lean Manufacturing and Digitalization: A Strategic Framework
for Enhancing Operational Excellence in Industry 4.0”**

Record of research work carried out by **Mohd Sarikh Ameer and Md. Zeeshan** bearing **GGV/21/01334, GGV/21/01322** respectively. Under my guidance and supervision for the award of Degree of Technology in the School of Studies, Engineering and Technology, Guru Ghasidas Vishwavidyalaya, Bilaspur, (C.G.), India. To the best of my knowledge and belief: -

- Embodies the work of the candidate himself.
- Has duly been completed.
- Fulfils the ordinance requirement relating to the University's Bachelor of Engineering.
- Is up to the desired standard regarding content and language for being referred to the examiners.


28/11/25
Professor

Department of Industrial & Production Engineering



ACKNOWLEDGEMENT

We are highly indebted to Prof. Mukesh Kumar Singh for his guidance and constant supervision as well as for providing necessary information regarding the project, and also for his/her support in the project. We owe our special thanks to our Head of Department, Dr. Mukesh Kumar Singh, Professor, for encouraging us to acquire courage and knowledge through this project. We would like to express our gratitude towards our parents and faculty members of the Department of Industrial and Production Engineering, School of Studies in Engineering & Technology, Guru Ghasidas Vishwavidyalaya, Bilaspur, C.G., for their kind cooperation and encouragement, which helped us in the completion of this project. We would like to express our special gratitude and thanks to all the staff of the Industrial and Production Engineering department for giving us such attention and time. Our thanks and appreciation also go to our colleagues in developing the project and the people who have willingly helped us out with their abilities.

Sign:

Sign:

Roll No.-21033134
Enrolment No.-GGV/21/01334

Roll No.-21033122
Enrolment No.-GGV/2101322



CERTIFICATE FROM THE EXAMINERS

This is to certify that the project work entitled:

**“Integrating Lean Manufacturing and Digitalization: A Strategic Framework
for Enhancing Operational Excellence in Industry 4.0”**

Submitted by:

Name	Roll No.	Enrolment No.
Mohd Sarikh Ameer	21033134	GGV/21/01334
Md Zeeshan	21033122	GGV/21/01322

Have been examined by the undersigned as part of the examination for the award
Bachelor of Technology degree in Industrial & Production Engineering of the School
of Studies in Engineering & Technology, Guru Ghasidas Vishwavidyalaya, (A Central
University, NAAC A⁺⁺), Bilaspur (C.G.).


.....
28/4/25

Internal Examiner

Date:


.....
28/4/25

External Examiner

Date:


28/4/25

Head of Department

Date:

गुरु घासीदास विश्वविद्यालय
(केन्द्रीय विश्वविद्यालय अधिनियम 2009 क्र. 25 के अंतर्गत स्थापित केन्द्रीय विश्वविद्यालय)
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Cover Page

Signature and Seal of the Head

गुरु घासीदास विश्वविद्यालय
(केन्द्रीय विश्वविद्यालय अधिनियम 2009 क्र. 25 के अंतर्गत स्थापित केन्द्रीय विश्वविद्यालय)
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Certificate

Signed by Head and Supervisor

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