INDUSTRIAL MATHEMATICS 2018-19

An add-on course 'Industrial Mathematics' was organized for the second year undergraduate students of various departments in the academic year 2018-2019. The board of studies was composed of Ms Amala Mary George, Ms Geethu Simon, Ms Reshma Joshy and Ms Jiji Paul A. The course duration was 30 hours. All the 45 students who joined the course completed the program and achieved a certificate.

Ph. (Off.) : 0480 2701159 Principal (Per.) : 0480 2708877 (Res) : 0480 2701876 (Fax) : 0480 2708877



SACRED HEART COLLEGE, CHALAKUDY

Railway Station Road, Thrissur Dt., Kerala - 680 307, India

(Affiliated to University of Calicut & Re-acredited with A+ Grade by NAAC, CGPA 3.55

E-mail : shcollegecky@gmail.com

Website : www.sacredheartcollege.ac.in

Date :

12-07-2018

To,

Ms. Reshma Joshy, Guest Faculty, Department of Mathematics, S H College, Chalakudy. Thrissur

Dear Sir / Madam

Sub: Appointment of member of Board of Studies

We are happy to inform you that you are appointed as a member of the Board of Studies of the Add-On Course 'Industrial Mathematics' in this college for the academic year 2018-19.

Thanking you.





PRINCIPAL BACRED KEARL COLLEGE CHALAKDOY



DEPARTMENT OF MATHEMATICS

SACRED HEART COLLEGE, CHALAKUDY

Add-on Course on

INDUSTRIAL MATHEMATICS

(Total 30 Hrs)

Module 1 Arithmetic with Whole Numbers, Fractions and Decimals (2 hours)

Arithmetic computations, following the order of operations using; whole numbers, fractions, decimals, and scientific notation

Module 2 Measurement Tools (4 hours)

Computations with units and convert units within Metric Systems, Measurements with measurement tools commonly used in the trades.

Module 3 Practical Plane Geometry and Solid Figures (8 hours)

Computations using formulas, and rearrange formulas into alternate forms, perimeters, areas, surface areas, and volumes of plane and solid figures.

Module 4 Ratio, Proportions, Percent and Trigonometry (8 hours)

problems involving percent, ratio, and proportion, algebraic equations including linear and quadratic, and solve systems of equations, problems involving right and oblique triangles by using trigonometric ratios.

Module 5 Statistics (8 hours)

Analyzing graphically and measures of central tendency to solve problems involving data sets, Translate numbers between decimal, binary, and hexadecimal representations.

REFERENCES

1. Saunders and Carman, Mathematics for the Trades, 8th edition. Publishers: Pearson

DEPARTMENT OF MATHEMATICS

SACRED HEART COLLEGE, CHALAKUDY

Add-on Course on

MATHEMATICS FOR COMPETITIVE EXAMINATION

(Total 30 Hrs)

Module 1 Data Interpretation (4 hours)

The data given in a Table, Graph, Bar Diagram, Pie Chart, Venn diagram.

Module 2 Sequence and Series (6 hours)

Identifying Patterns of Sequences, Geometric Series, Arithmetic Series, Harmonic Series.

Module 3 Arithmetic Skills (8 hours)

BODMAS Rule, Fractions, Divisibility rule, LCM & GCD (HCF). Date, Time and Arrangement Problems: Calendar Problems, Clock Problems, Blood Relationship.

Module 4 Quantitative aptitude (8 hours)

Averages, Ratio and Proportion, Problems on ages, Problems on time, distance and speed.

Module 5 Computational Skills for Management (4 hours)

Percentages, Profit and Loss, Simple and Compound Interest.

REFERENCES

1. Quantitative Aptitude for Competitive Examination by R S Agrawal, S. Chand publications.

2. Quantitative Aptitude and Reasoning by R V Praveen, PHI publishers.

3. Quantitative Aptitude for Competitive Examination by Abhijit Guha, Tata Mc Graw Hill publications.

DEPARTMENT OF MATHEMATICS

SACRED HEART COLLEGE, CHALAKUDY

Add-on Course on

MATHEMATICS FOR SOCIAL SCIENCES

(Total 30 Hrs)

Module 1 Functions (6 hours)

Definition of a function, Function Notation and Evaluating Functions, Domain and Range of Functions, Composition of Functions, Inverse Functions, Special Functions (Constant, Polynomial, Rational, Absolute Value), The Remainder and Factor Theorem and Solution of Cubic Equations, Application of Functions (Depreciation, Demand and Supply Curves, Production Levels), Sketching Graphs of Functions (Constant, Linear, Quadratic, Square Root, Absolute Value), Transforming Graphs (Horizontal and Vertical Shifts, Reflection in the X-axis).

Module 2 Solutions of Inequalities, Complex Numbers, Exponential & Logarithmic Functions (5 hours)

Systems of Linear Inequalities, Solving Quadratic Inequalities, Graphs of Systems of Inequalities, Applications of Inequalities (Profits, Sales Allocation, Investment), The Definition of Imaginary Numbers, The Definition of Complex Numbers, Addition, Multiplication and Division of Complex Numbers, Graphs of Exponential and Logarithmic Function, The Natural Exponential and Natural Logarithmic Function, Basic Properties of Logarithm, Solving Exponential and Logarithmic Functions, Applications.

Module 3 Matrix Algebra (4 hours)

Definition of a Matrix, Matrix Addition, Multiplication and Transposition, The Determinant of a 2x2 and 3x3 Matrix, The inverse 2x2 Matrix, Solving 2x2 Systems of Linear Equations Using Matrix Inversion, Solving 3x3 Systems of Linear Equations Using Cramer's Rule.

Module 4 Sequences and Series, Limits and Continuity (9 hours)

Definition of a Sequence, Types of Sequences (Arithmetic and Geometric), Sigma Notation, Arithmetic and Geometric Series, Sums of Arithmetic and Geometric Series including sums to infinity, Concepts of a Limit, Limits of Sequences, Limits of Polynomial and Rational Functions, One-Sided Limits, Limits to Infinity, Distinguish between Continuous and Discontinuous Functions, Finding Points of Discontinuity of Rational Functions

Module 5 Differentiation of Single Variable Functions & Applications of Differentiation (6 hours)

The Concept of a Derivative, Differentiation from First Principles, Rules of Differentiation (Power, Chain, Product, Quotient Rules), Differentiation of Exponential and Logarithmic Functions, Determination of Gradients, Increasing and Decreasing Functions, Relative Extrema (Maxima and Minima) using the First and Second Derivative Tests, Concavity and Points and Inflection, Vertical and Horizontal Asymptotes

REFERENCES

1. Haeussler, Paul and Wood, Introductory Mathematics for Business, Economics, and the Life and Social Sciences (12 th Edition), Pearson Education, Inc., New Jersey, 2008.

SACRED HEART COLLEGE, CHALAKUDY INDUSTRIAL MATHEMATICS

Time : One Hour

Maximum Marks: 20

1. Write in numerical form : "Twenty-one billion, ten million, thirty-one thousand, one". a) 210001031001 b) 21010031001 d) 210010310001 c) 21001031001 2. Round 247563 to the nearest hundred thousand a) 200000 b) 250000 c) 300000 d) 248000 3. Five bolts are needed to mount a tyre. How many bolts are needed to mount all four types on 60 cars? c) 1200 d) None of these a) 300 b) 240 4. The value of $6 + 2 \times 3 \div (7 - 4) + 5 \times 2$ is b) 14 c) 18 a) 26 d) None of these 5. A carpenter must mount an electric panel on an uneven surface. She must raise one corner of the panel $1\frac{1}{8}$ in. off the surface. If $\frac{3}{16}$ in. washers are used as spacers, how many washers are needed to mount the panel? a) 7 b) 6 c) 8 d) None of these 6. $3\frac{1}{5} + 1.08 =$ a) 4.28 b) cannot add these numbers c) 1.68 d) none of these

7. A computer printer sells for Rs 13200.00 after a 12% discount. What was its original or list price?

a) Rs 15000	b) Rs 11616	c) Rs 14784	d) none of these
-------------	-------------	-------------	------------------

Date	Balance	Withdrawals	Deposits
Oct. 1	\$367.21		
Oct. 3		\$167.05	
Oct. 4		104.97	
Oct. 8			\$357.41
Oct. 16		87.50	
Oct. 18		9.43	
Oct. 20		30.09	
Oct. 22			364.85
Oct. 27		259.47	
Oct. 30		100.84	
Nov. 2		21.88	
Nov. 4	?		

8. Consider the balance checking account as shown in the given figure.

Then the closing balance as of November 4 is

- a) \$ 426.18 b) \$ 308.24 c) \$ 367.21 d) none of these
- 9. A 9 in. pulley on a drill press rotates at 960 rpm. It is belted to a 5 in. pulley on an electric motor. Find the speed of the motor shaft.
 - a) 533 b) 1728 c) 534 d) none of these

10. 30% Of 120 is

- a) 36 b) 84 c) 156 d) none of these
- 11. If a train runs at 40 kmph it reaches its destination late by 11 minutes. But if it runs at 50 kmph it is late by 5 minutes only. Find the distance covered by the train.
 - a) 25 km b) 30 km c) 20 km d) 27 km

12. One litre is equal to

a) 1000 cm b) 100 cm c) 1000 cm^3 d) none of these

13. The scientific notation of the number 15000 is

a) 15×10^3 b) 1.5×10^4 c) 0.15×10^5 d) all of these

14. Board 1 must be joined to board 2 at a right angle as in the figure.



If $\angle x$ measures 42°, what must $\angle y$ measure?

- a) 58° b) 48° c) 138° d) none of these
- 15. The area of the given figure is



- a) 238 b) 294 c) 266 d) none of these
- 16. If eight bolts are to be equally spaced around a circular steel plate at a radius of 9 in., what must be the spacing between the centers of the bolts along the curve?
 - a) 7.07 in. b) 8.01 in. c) 7.53 in. d) none of these
- 17. Find the volume of the solid given in the figure



a) 1218 in. ³	b) 1000 in. ³	c) 1120 in. ³	d) none of these
--------------------------	--------------------------	--------------------------	------------------

18. Consider the triangle given in the figure. Find A.



19. Consider the pair of equations x = 1 + y and 2y + x = 7. The solution is

a)
$$x = 1, y = 0$$
 b) $x = 3, y = 2$ c) $x = 2, y = 1$ d) $x = 2, y = 3$

20. The following broken-line graph shows the monthly sales of tires in a company.



Monthly Tire Sales

How many tires were sold during the first three months of the year combined?

a) 1930 b) 1950 c) 1900 d) 700

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY																	
Stuc	students Attendance List of Add-On Course Industrial Mathematics 2018-19 Date of Commencement: 17/07/2018															/2018	
SI. No.	Name	Class	Day 1	Dav 2	Dav 3	Dav 4	Dav 5	Dav 6	Day 7	Dav 8	Dav 9	Day 10	Day 11	Dav 12	Dav 13	Day 14	Dav 15
1	NIMITHA SATHEESAN	II Bcom CA															
2	SALMA SAREESA S I	II Bcom CA															
3	SARIGHA P R	II Bcom CA															
4	SUDHARMA J	II Bcom CA															
5	VINEESHA VICTOR	II Bcom CA															
6	VISMAYA N	II Bcom CA															
7	VISMAYA VENUGOPAL	II Bcom CA															
8	AJEENA KURYAN	II Bcom CA															
9	AJEESHA M R	II Bcom CA															
10	ALEENA SHAJU	II Bcom CA															
11	AMRUTHA K BABU	II Bcom CA															
12	HARITHA K G	II Bcom Finance															
13	JESSNA JOSE	II Bcom Finance															
14	KRIPAMOL JOSE	II Bcom Finance															
15	KRISHNAPRIYA SURENDRAN	II Bcom Finance															
16	LATISA SHAJAN	II Bcom Finance															
17	LEEANN ELIZABETH JEEN	II Bcom Finance															
18	NISHA JOY	II Bcom Finance															
19	ASWANI N S	II Bcom CA															
20	ASWANI P V	II Bcom CA															
21	ATHIRA K S	II Bcom CA															
22	BLESSY FRANCIS	II Bcom CA															
23	DAISY DAVIS	II Bcom CA															
24	DEVIKA KRISHNAN	II Bcom CA															
25	DEVIKA VINU	II Bcom CA															
26	DINCY DAVIS	II Bcom CA															
27	DISNI DAVIS	II Bcom CA															
28	GAYATHRI K V	II Bcom CA															
29	GREESHMA K K	II Bcom CA															
30	JINU THOMAS	II Bcom CA															

31	ANGEL THOMAS	II Bcom Finance								
32	ANITTA DANIEL	II Bcom Finance								
33	ARYA DEVI BHASI	II Bcom Finance								
34	BLESSY BABU	II Bcom Finance								
35	AMRUTHA PAUL	II BSc Mathematics								
36	CHRISTEENA DEVASSYKUTTY	II BSc Mathematics								
37	DEVIKA SAJI	II BSc Mathematics								
38	JANET JOYSON	II BSc Mathematics								
39	KRISHNANJANA M G	II BSc Mathematics								
40	NAZIYA N KHAN	II BSc Mathematics								
41	SAJANA SADANANDAN	II BSc Mathematics								
42	SMIJI JACOB	II BSc Mathematics								
43	SREELAKSHMI	II BSc Mathematics								
44	VINCY JOY	II BSc Mathematics								
45	DARSANA JOHN	II BSc Mathematics								

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

DARSANA JOHN, II BSc Mathematics, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.



DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

VINCY JOY, II BSc Mathematics, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.



DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

SREELAKSHMI, II BSc Mathematics, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.



DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

SMIJI JACOB, II BSc Mathematics, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.



DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

SAJANA SADANANDAN, II BSc Mathematics, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.

DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

NAZIYA N KHAN, II BSc Mathematics, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.

DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

KRISHNANJANA M G, II BSc Mathematics, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.

DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

JANET JOYSON, II BSc Mathematics, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.



DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

DEVIKA SAJI, II BSc Mathematics, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.



DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

CHRISTEENA DEVASSYKUTTY, II BSc Mathematics, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.

DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

AMRUTHA PAUL, II BSc Mathematics, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.



DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

BLESSY BABU, II Bcom Finance, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.



DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

ARYA DEVI BHASI, II Bcom Finance, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.



DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

ANITTA DANIEL, II Bcom Finance, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.



DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

ANGEL THOMAS, II Bcom Finance, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.



DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

JINU THOMAS, II Bcom CA, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.



DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

GREESHMA K K, II Bcom CA, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.



DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

GAYATHRI K V, II Bcom CA, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.

DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

DISNI DAVIS, II Bcom CA, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.

DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

DINCY DAVIS, II Bcom CA, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.



DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

DEVIKA VINU, II Bcom CA, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.

DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

DEVIKA KRISHNAN, II Bcom CA, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.



DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

DAISY DAVIS, II Bcom CA, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.



DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

BLESSY FRANCIS, II Bcom CA, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.



DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

ATHIRA K S, II Bcom CA, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.

DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

ASWANI P V, II Bcom CA, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.

DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

ASWANI N S, II Bcom CA, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.

DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

NISHA JOY, II Bcom Finance, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.



DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

LEEANN ELIZABETH JEEN, II Bcom Finance, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.



DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

LATISA SHAJAN, II Bcom Finance, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.



DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

KRISHNAPRIYA SURENDRAN, II Bcom Finance, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.

DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

KRIPAMOL JOSE, II Bcom Finance, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.



DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

JESSNA JOSE, II Bcom Finance, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.



DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

HARITHA K G, II Bcom Finance, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.



DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

AMRUTHA K BABU, II Bcom CA, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.



DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

ALEENA SHAJU, II Bcom CA, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.



DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

AJEESHA M R, II Bcom CA, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.

DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

AJEENA KURYAN, II Bcom CA, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.

DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

VISMAYA VENUGOPAL, II Bcom CA, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.



DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

VISMAYA N, II Bcom CA, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.

DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

VINEESHA VICTOR, II Bcom CA, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.



DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

SUDHARMA J, II Bcom CA, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.



DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

SARIGHA P R, II Bcom CA, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.



DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

SALMA SAREESA S I, II Bcom CA, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.

DR. SR. IRENE Principal

SACRED HEART COLLEGE FOR WOMEN, CHALAKUDY



THIS CERTIFICATE IS GIVEN TO

NIMITHA SATHEESAN, II Bcom CA, Sacred Heart College, Chalakudy

for successfully completing all the requirements of the add-on course on INDUSTRIAL MATHEMATICS during the academic year 2018-19.



DR. SR. IRENE Principal