

Dayanand Education Society's

Dayanand College of Arts, Latur.

Department of Economics under the Humanities Faculty

Certificate / Value added Course

Affiliated to

Swami Ramanand Teerth Marathvada University, Nanded.

Subject - Economics

Syllabus

Certificate / Value added Course

Effective from Academic Year 2025-2026

Dayanand College of Arts, Latur.

Department of Economics under the Humanities Faculty

Certificate / Value added Course

From the Desk of Chairman, Board of Studies of the Certificate and value added Course in Department of Economics.

❖ Preamble:-

Department of economics provide always opportunity to development of student themselves with theory, practical and field work initiatives. Hence department has started certificate and value added course with emerging issues in economics. This will develop analytical and practical skill of student.

❖ Objectives:-

1. To understand Fundamental Economic Concepts
2. Analyse various Systems
3. To understand Policies and Programs
4. To understand emerging issues in economics
5. Analyse financing

❖ Outcomes :-

1. Get ability to Conduct Economic Analyses
2. Got the knowledge about how to interpret Economic Reports
3. Studied Financing
4. Study measure impact of Public Programs
5. Got the knowledge about emerging issues in economics.

Dr. Balaji Ghute

Chairman,

Board of Studies of the Certificate and value added Course in Department of Economics, Dayanand College of Arts, Latur.

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Dayanand College of Arts, Latur.

Department of Economics under the Humanities Faculty

Certificate / Value added Course

**Members of the Board of Studies of the Certificate and value added Course in Department of Economics,
Dayanand College of Arts, Latur.**

Sr. No	Name of the Member	Designation	College Address , University	Contact No, E- mail
01	Dr. Balaji Ghute	Chairman	Dayanand College of Arts, Latur. SRTMU, Nanded.	9890079180, btghute@gmail.com
02	Dr. Dipak Bharati	Member	MSP Mandal's Yashwantrao Chavan College, Ambajogai, Dist. Beed, Dr. B. A. M. U., Chh. Sambhajinagar	9422353611, d.bharati7@yahoo.com
03	Dr. Amol Pagar	Member	Shivjagruti Senior College, Nalegaon Tq. Chakur, Dist. Latur, SRTMU, Nanded.	9021223301, pagar.amol121@gmail.com
04	Dr. Swapnaja Pathak	Member	Dayanand College of Arts, Latur. SRTMU, Nanded.	7020106866, pswapnaja@gmail.com
05	Arnav Patil (Student Member)	Member	Dayanand College of Arts, Latur. SRTMU, Nanded.	8308537587, arnavpatil155@gmail.com

Dayanand College of Arts, Latur.

Department of Economics under the Humanities Faculty

Certificate / Value added Course

General Guide lines for course structure:

- 1) Undergraduate and postgraduate students are eligible for admission to this course.
- 2) There is no charges for this course it is free for everyone.
- 3) Students from our college and other colleges can take admission for this course.
- 4) Admitted students will get a certificate after passing the examination with requisite marks
- 5) Courses should be taught by experienced faculty with expertise in the subject area.
- 6) Regular assessments to ensure students meet course objectives.
- 7) Duration: Typically 5 weeks to 6 weeks.
- 8) Open to students from various disciplines, including humanities, social sciences, and others.
- 9) Focused on theoretical and practical aspects of the subject.
- 10) Practical and application-oriented, focusing on skill development.
- 11) Students can acquire specialized skills and knowledge.
- 12) Students can explore subjects beyond their primary discipline.
- 13) Courses can foster personal growth and development.

Dayanand College of Arts, Latur.

Department of Economics under the Humanities Faculty

Certificate / Value added Course

Teaching Scheme & Duration

Course Title	Course Code	Teaching Scheme Hrs./ Weekly (1Hrs. = 60 M.)			Total Duration (1 weekly = 6 Hrs.)
		Theory	Practical	Total	
Economics of Health	DACLECO301	6	--	06	30
Economics of Solar Power	DACLECO302	6	--	06	30
Artificial Intelligence for Economics	DACLECO303	6	--	06	30
Innovation and Economics	DACLECO304	6	--	06	30

Dayanand Education Society's
Dayanand College of Arts, Latur.

Department of Economics under the Humanities Faculty

Certificate / Value added Course

Examination Scheme

(25 Marks Internal and 25 Marks MCQ)

Course Name	Course Code	Internal			MCQ	Total
		Seminar	Group Discussion	Home Work		
Economics of Health	DACLECO301	10	10	05	25	50
Economics of Solar Power	DACLECO302	10	10	05	25	50
Artificial Intelligence for Economics	DACLECO303	10	10	05	25	50
Innovation and Economics	DACLECO304	10	10	05	25	50

Dayanand College of Arts, Latur.

Department of Economics under the Humanities Faculty

Certificate / Value added Course

Course Title : Economics of Health

Course Code : DACLECO301

Syllabus

Course Objectives :

1. To understand Fundamental Economic Concepts
2. Analyse Healthcare Systems
3. To understand Health Policies and Programs
4. To understand Health and Development
5. Analyse Healthcare Financing

Course Outcomes :

1. Get ability to Conduct Economic Analyses
2. Got the knowledge about how to interpret Economic Reports
3. Studied Healthcare Financing
4. Study measure impact of Public Health Programs
5. Got the knowledge about analyse Demand and Supply in Healthcare

Dayanand Education Society's
Dayanand College of Arts, Latur.

Department of Economics under the Humanities Faculty

Certificate / Value added Course

Course Title : Economics of Health

Course Code : DACLECO301

Module No	Unit No	Topic	Hrs. Required to cover the contents 1Hrs.= 60M.
01		Introduction	5
	1.1	Meaning and definition of Health Economics	
	1.2	Scope of Health Economics	
	1.3	Importance of Health Economics	
02		Demand and Supply of Healthcare	10
	2.1	Utility and Demand for Health care	
	2.2	Supply in Health care	
	2.3	Cost of Healthcare	
03		Financing and Insurance in Health Care and Health Systems	5
	3.1	Financing Health care	
	3.2	Uncertainty and Risk	
	3.3	Health Insurance	
04		Public Health and Policies	10
	4.1	Introduction to Public Health	
	4.2	Governance	
	4.3	Health reforms and challenges	
Total			30

Dayanand Education Society's
Dayanand College of Arts, Latur.

Department of Economics under the Humanities Faculty

Certificate / Value added Course

Course Title : Economics of Health

Course Code : DACLECO301

Reference Books.

1. Bhattacharya, J., Hyde, T., & Tu, P., Health Economics. Palgrave Macmillan, (2014).
2. Coelli, T. J., Rao, D. S. P., O'Donnell, C. J., & Battese, G. E., An introduction to efficiency and productivity analysis, (2005).
3. Morris, S., Devlin, N., Parkin, D., & Spencer, A., Economic Analysis in Health Care (2nd ed.). Wiley, (2012).
4. Zweifel, P., Breyer, F., & Kifmann, M., Health Economics (2nd ed.). Springer, (2009).
5. Springer science & business media.
6. James W. Henderson, Health Economics and Policy, Cengage Learning India Pvt. Ltd., 15th June, 2024
7. Jay Bhattacharya, Timothy Hyde, Peter Tu, Health Economics, Palgrave Macmillan, ISBN-13-978-1137029966, 2013th , 30th October, 2023.
8. Lorna Guinness & Virginia Wiseman, Introduction to Health Economics, Second Edition, Open University Press, ISBN-13-978-0335243563, 16th October, 2011
9. Government of Economics, Annual Reports of Department of Research, (<http://dhr.gov.in/documents/annual-reports>)
10. Government of Economics, The New Education Policy, 2020

Dayanand College of Arts, Latur.

Department of Economics under the Humanities Faculty

Certificate / Value added Course

Course Title : Economics of Solar Power

Course Code : DACLECO302

Syllabus

Course Objectives :

1. Understanding Energy as a Scarce Resource
2. Analyzing Energy Demand and Supply
3. Interactions between Energy, Environment, and Climate Change
4. Economic Analysis of Solar Power Projects, Welfare and Environmental Economics
5. To Tools study and Techniques for Economic Analysis

Course Outcomes :

1. In-depth understand energy economics
2. Able to analyze energy projects
3. Got knowledge of environmental and social impacts
4. Understand relevant policies
5. Study tools and techniques for economic analysis

Dayanand Education Society's
Dayanand College of Arts, Latur.

Department of Economics under the Humanities Faculty

Certificate / Value added Course

Course Title : Economics of Solar Power

Course Code : DACLECO302

Module No	Unit No	Topic	Hrs. Required to cover the contents 1Hrs.= 60M.
01		Introduction of Solar Energy	5
	1.1	Meaning and Definition	
	1.2	Classification of Solar Energy	
	1.3	Measurement of Solar Energy	
02		Energy Demand	8
	2.1	Present and future demand for Solar Energy	
	2.2	Demand side of Solar Energy	
	2.3	Policies for Energy Demand	
03		Energy Supply	7
	3.1	Non-renewable Energy Supply	
	3.2	Electricity Supply	
	3.3	Policy	
04		Energy Market	10
	4.1	Structure of Energy Market	
	4.2	Environment and Solar Energy	
	4.3	Climate change	
Total			30

Dayanand Education Society's
Dayanand College of Arts, Latur.

Department of Economics under the Humanities Faculty

Certificate / Value added Course

Course Title : Economics of Solar Power

Course Code : DACLECO302

Reference Books.

1. Bhattacharyya, Subhes. C., Energy Economics: Concepts, Issues, Markets and Governance. Springer.London, UK. (Selected chapters), (2011).
2. Stevens, P., An Introduction to Energy Economics. In Stevens, P.(ed.) The Economics of Energy, Vol.1, Edward Elgar, Cheltenham, UK., (2000).
3. Mehmet Kanoglu, Yunus A. Cengel, John M. Cimbala, Fundamentals and Applications of Renewable Energy, McGraw Hill, ISBN-13-978 9390385638, 10th December, 2020
4. Pamod Deo, Sushanta K. Chatterjee and Shrikant Modak, Renewable Energy in India, Economics and Market Dynamics, Atlantic Publishers & Distributors, 13th September, 2024
5. Ajay Kumar Gupta, Solar PV Power and Solar Products Handbook, ISBN-13-978-8195577590, 1st January, 2022

Dayanand College of Arts, Latur.

Department of Economics under the Humanities Faculty

Certificate / Value added Course

6. Travis Bradford, Solar Revolution, The Economic Transformation of the Global Energy Industry, Mit Pvt. Ltd, ISBN-13-978-0262026048, 1st October, 2006
7. Hermann Scheer, The Solar Economy: Renewable Energy for a Sustainable Global Future, Earthscan Publication Ltd, U.S.A., ISBN-978 1844070756, 2012.
8. John Mathews, Solar-Hydrogen Economy: Driving the Green Hydrogen Industrial Revolution, Anthem Press, 7th February, 2023.
9. Sapan Thapar, Renewable Energy: Policies, Project Management and Economics: Wind and Solar Power (India), Springer Nature Songapore, 12th January, 2024.
10. Kirschen D., Fundamentals of Power System Economics, Wiley India Exclusive (CBS), ISBN-13-978-8126563197, 1st January, 2016.

Dayanand College of Arts, Latur.

Department of Economics under the Humanities Faculty

Certificate / Value added Course

Course Title : Artificial Intelligence for Economics

Course Code : DACLECO303

Syllabus

Course Objectives :

1. To understand application of Artificial Intelligence in Economics.
2. To study optimization and search techniques.
3. To Study Basic Predictive algorithms like linear regression, time series analysis etc.
4. To understand Game Theory, Auction Theory.
5. Study some case studies as Learning Theory for Economics, Consumer Behavior, Reinforcement Learning Finance, Multi-agent Simulation of Economic Systems, Econo-physics.

Course Outcomes :

1. Understand some basic applications of artificial intelligence in economics.
2. Study the optimization concept and search techniques.
3. Study some important predictive algorithms like linear regression, time series analysis etc.
4. Study game theory and auction theory in detail.
5. Focused on some important case studies like Learning Theory for

Dayanand College of Arts, Latur.

Department of Economics under the Humanities Faculty

Certificate / Value added Course

Economics, Consumer Behavior, Reinforcement Learning Finance,
Multi-agent Simulation of Economic Systems, Econo-physics.

Course Title. : Artificial Intelligence for Economics

Course Code : DACLECO303

Module No	Unit No	Topic	Hrs. Required to cover the contents 1Hrs.= 60M.
01		Introduction Artificial Intelligent for Economics	7
	1.1	Basic ideas of AI/ML	
	1.2	Real life problems and techniques	
	1.3	Optimization and Techniques	
02		Basic Predictive Algorithms	7
	2.1	Linear Regression Concept	
	2.2	Time Series Forecasting Meaning and Concept	
	2.3	Graphical Models	
03		Game theory	8
	3.1	Meaning and Definition of Game Theory	
	3.2	Basic Concepts in Game Theory	
	3.3	Zero Sum Game	
04		Case Studies	8
	4.1	Learning Theory for Economics	
	4.2	Reinforcement Learning in Finance	
	4.3	Econo-physics	
Total			30

Dayanand Education Society's
Dayanand College of Arts, Latur.

Department of Economics under the Humanities Faculty

Certificate / Value added Course

Course Title : Artificial Intelligence for Economics

Course Code : DACLECO303

Reference Books:

1. Mullainathan, Sendhil, and Jann Spiess, Machine Learning: An Applied Econometric Approach. Journal of Economic Perspectives, 31 (2): 87-106, 2017.
2. Athey, Susan, and Guido W. Imbens, Machine learning methods that economist should know about, Annual Review of Economics 11 (2019): 685-725, 2019.
3. Goulet Coulombe, Philippe, et al., How is machine learning useful for macroeconomic forecasting? Journal of Applied Econometrics 37.5 (2022): 920-964, 2022.
4. Dr. Hashem Ali Almashaqbeh, Anamika Maurya, Dr. Dilip Kumar Sharma and Dr. Raru Agrawal, Artificial Intelligence in Digital Economic, Book River, ISBN-978-9355151834, June, 2024.
5. Ragupathy Venkatachalam, Artificial Intelligence, Learning and Computation in Economics and Finance, Springer International Publishing, ISBN-978-3031151931.
9. Janne M. Binner, Crahamkedall, Shu-Henec Chen, Applicationas of Artificial Intelligence in Finance and Economics, Emerald Publishing Limited, ISBN-978-0762311507.
10. कोड अकादमी, आर्टीफिसिअल इंटेलिजन्स, कोड अकादमी, ISBN-9789349075917, 2025 (in Hindi)
11. अतुल जालान, सुश्रुत कुलकर्णी, आर्टीफिसिअल इंटेलिजन्स: तंत्रज्ञान लिहीत असलेली मानवजातीच्या भविष्याची साहस कथा, साकेत प्रकाशन प्रा. ली., ISBN-978-9352204281, 2023.
12. डॉ. गिरीश वालावलकर, आर्टीफिसिअल इंटेलिजन्स: कृत्रिम बुद्धीमत्तेचं तंत्रज्ञान - उपयोग आणि आव्हानं, माथमिरर पब्लिशिंग हाऊस, 2025
13. डॉ. दीपक शिकारपूर, आर्टीफिसिअल इंटेलिजन्स: एक नवीन क्रांतिकारी युग, 2025.

Dayanand College of Arts, Latur.

Department of Economics under the Humanities Faculty

Certificate / Value added Course

Course Title : Innovation and Economics

Course Code : DACLECO304

Syllabus

Course Objectives :

1. To Understand Innovation Systems and Analyse Innovation Types
2. To Examine incentive Tools and Exploring the Role of Institutions
3. To understand the link between Innovation and Economic Growth
4. To learn Policy Framework and analyses the Start-up Ecosystem
5. To conduct comparative analysis

Course Outcomes :

1. Understand Innovation Systems and Analyse Innovation Types
2. Examine incentive Tools and Exploring the Role of Institutions
3. Understand the link between Innovation and Economic Growth
4. Learn Policy Framework and analyses the Start-up Ecosystem
5. Conduct comparative analysis

Dayanand College of Arts, Latur.

Department of Economics under the Humanities Faculty

Certificate / Value added Course

Course Title : Innovation and Economics

Course Code : DACLECO304

Module No	Unit No	Topic	Hrs. Required to cover the contents 1Hrs.= 60M.
01		Introduction innovation	7
	1.1	Meaning of Innovation in economics	
	1.2	Different types of innovation	
	1.3	Technological innovation and the theory of firm	
02		Theory and Practical of Innovation	8
	2.1	Innovation: A systems approach	
	2.2	Intellectual property rights and innovation	
	2.3	Case of product patent	
03		Research in Economics and Innovation	7
	3.1	Research and public-private interaction	
	3.2	Markets for technology	
	3.3	Innovation and economic development	
04		Policies and Economics and Innovation	8
	4.1	Diffusion of technology	
	4.2	Innovation policy	
	4.3	India's STIP 2020	
Total			30

Course Title : Innovation and Economics

Dayanand Education Society's
Dayanand College of Arts, Latur.

Department of Economics under the Humanities Faculty

Certificate / Value added Course

Course Code : DACLECO304

Reference Books:

1. S. Scotchmer. Innovation and Incentives. Cambridge MA: MIT Press, 2004.
2. B. Hall and N. Rosenberg. Handbook of Economics of Innovation. Netherland: Elsevier, 2010.
3. W. D. Nordhus. Invention, Growth, and Welfare: A Theoretical Treatment of Technological Change. Cambridge, MA: MIT Press, 1969.
4. A. Arora, A. Fosfuri and A. Gambardella. Markets for Technology. Cambridge, MA: MIT Press, 2002.
5. J. Watal. Intellectual property Rights in the WTO and Developing Countries. New Delhi: Oxford University Press, 2001.
6. R. Basant. The Black Box: Innovation and Public Policy in India. India: Penguin Portfolio, 2021.
7. Atkinson, R.D. and Ezell, S.J., Innovation economics. Yale University Press, 2012.
8. Sources: Desai, A, The origin and direction of Industrial R&D in India, Research Policy 9 (74-96), 1980.
9. Forbes, N., Technology and Indian industry: what is liberalization changing? Technovation, 19 (1999) 403–412, 1999.
10. Forbes, N., India's National Innovation System: Transformed or Half-formed, No. WP/16/01, CTIER Working Papers, 2016.

Dayanand Education Society's
Dayanand College of Arts, Latur.

Department of Economics under the Humanities Faculty

Certificate / Value added Course

MCQ Question Paper Pattern - with effect from 2025-2026

Time : 30 M

Marks : 25

1. All Question equal Marks.
2. Total Question 25.
3. All Question will be Compulsory.

Q. 1 ----- 01 Marks A.----- B.----- C.----- D.-----	Q. 13 ----- 01 Marks A.----- B.----- C.----- D.-----
Q. 2 ----- 01 Marks A.----- B.----- C.----- D.-----	Q. 14 ----- 01 Marks A.----- B.----- C.----- D.-----
Q. 3 ----- 01 Marks A.----- B.----- C.----- D.-----	Q. 15 ----- 01 Marks A.----- B.----- C.----- D.-----
Q. 4 ----- 01 Marks A.----- B.----- C.----- D.-----	Q. 16 ----- 01 Marks A.----- B.----- C.----- D.-----
Q. 5 ----- 01 Marks A.----- B.----- C.----- D.-----	Q. 17 ----- 01 Marks A.----- B.----- C.----- D.-----
Q. 6 ----- 01 Marks A.----- B.----- C.----- D.-----	Q. 18 ----- 01 Marks A.----- B.----- C.----- D.-----
Q. 7 ----- 01 Marks A.----- B.----- C.----- D.-----	Q. 19 ----- 01 Marks A.----- B.----- C.----- D.-----
Q. 8 ----- 01 Marks A.----- B.----- C.----- D.-----	Q. 20 ----- 01 Marks A.----- B.----- C.----- D.-----
Q. 9 ----- 01 Marks A.----- B.----- C.----- D.-----	Q. 21 ----- 01 Marks A.----- B.----- C.----- D.-----
Q. 10 ----- 01 Marks A.----- B.----- C.----- D.-----	Q. 22 ----- 01 Marks A.----- B.----- C.----- D.-----
Q. 11 ----- 01 Marks A.----- B.----- C.----- D.-----	Q. 23 ----- 01 Marks A.----- B.----- C.----- D.-----
Q. 12 ----- 01 Marks A.----- B.----- C.----- D.-----	Q. 24 ----- 01 Marks A.----- B.----- C.----- D.-----
	Q. 25 ----- 01 Marks A.----- B.----- C.----- D.-----

Dayanand Education Society's

Dayanand College of Arts, Latur.

Department of Economics under the Humanities Faculty

Certificate / Value added Course

Answer Sheet

Q. 1.		Q. 11.		Q. 21.	
Q. 2.		Q. 12.		Q. 22.	
Q. 3.		Q. 13.		Q. 23.	
Q. 4.		Q. 14.		Q. 24.	
Q. 5.		Q. 15.		Q. 25.	
Q. 6.		Q. 16.			
Q. 7.		Q. 17.			
Q. 8.		Q. 18.			
Q. 9.		Q. 19.			
Q. 10.		Q. 20.			