

आंध्रप्रदेश केंद्रीय विश्वविद्यालय  
**CENTRAL UNIVERSITY OF ANDHRA PRADESH**  
Ananthapuramu

**Postgraduate Programme Structure**  
as per the UGC Credit Framework (NEP 2020)



*Vidya Dadati Vinayam*  
(Education Gives Humility)

## ***M.Sc. Economics and Data Analytics***

*“Economics is a study of mankind in the ordinary business of life”*

- Alfred Marshall (1890)



**Programme Structure**  
(With effect from AY 2024 - 25)

आंध्रप्रदेश केंद्रीय विश्वविद्यालय  
**CENTRAL UNIVERSITY OF ANDHRA PRADESH**  
**Ananthapuramu**

**CONTENTS**

<b>Sl. No.</b>	<b>Particulars</b>	<b>Page No.</b>
1	Introduction to the Programme	1-3
2	Semester and Course Wise Credits	4
3	Programme Structure	5-6
4	Credits Distribution	7
5	Important Information to Students	8



## **Introduction to the programme**

The Master of Science in Economics and Data Analytics (MED) program at the Central University of Andhra Pradesh is designed for those who want to gain the in-demand skills needed to succeed in today's job market. The program aims to produce competent and well-equipped graduates, who are capable of making meaningful contributions to the business world, armed with both theoretical knowledge and practical experience. Emphasizing critical thinking and problem-solving, the curriculum aims to develop analytical skills crucial for navigating the ever-evolving business landscape. The program combines knowledge of human behavior and decision-making from economics with the latest data analytics techniques. It has a strong foundation on both economics and data analytics through core courses. Technical skills and competencies are at the heart of the programme where students will be familiar with handling data software packages like R, Python, and SPSS. It also offers a variety of elective courses in econometrics and data analytics. Students have the opportunity to put their skills into practice through talks with industry professionals, internship, dissertations, and field surveys. Such a multidisciplinary approach helps students to gain hands-on experience, refining their skills and preparing them for real-world challenges. These practical components not only deepen students' understanding but also foster professional growth, ensuring they are well-equipped to thrive in various professional settings.

## **Programme Vision**

The vision for the programme is to be a globally recognized leader in providing advanced education that integrates economic theory with econometrics and statistical applications with latest packages. It aspires to empower students with the knowledge, skills, and ethical framework necessary to excel in a dynamic and interconnected world. Through innovative research, interdisciplinary collaboration, and a commitment to excellence, it aims to prepare our graduates to address complex economic challenges and make meaningful contributions to society. The vision is to create a vibrant learning community that fosters intellectual curiosity, critical thinking, and lifelong learning, and equips students to become leaders in academia, industry, government, and beyond.

## **Programme Objectives**

The purpose of this program is to:

- Foster a dynamic environment that nurtures students' intellectual, social, cultural, ethical, and spiritual growth, preparing them for active citizenship, meaningful employment, and lifelong learning in an interconnected world.



- Embrace diverse, adaptable, and practical teaching approaches that cater to the diverse learning styles of students, promoting effective learning outcomes.
- Bridge the gap between academia and industry by engaging industry partners, faculty, research scholars, and students in collaborative research projects that address real-world challenges.
- Establish partnerships with corporate entities through Memoranda of Understanding (MoUs) to provide students with training opportunities that align with the needs of the global job market and society.
- Support and recognize the achievements of faculty, scholars, and students across all disciplines, including patents, publications, and research grants, to enhance the academic reputation of the institution.
- Cultivate a strong network of alumni and student mentors, fostering holistic student development, wellness, integrity, leadership, and resilience through professional exchanges and mentorship programs.

### **Learning Outcomes**

The learning outcomes are designed to equip students with the knowledge, skills, and abilities necessary to succeed in careers related to economics, data analysis, and decision-making:

- Acquire a deep understanding of economic theory, including microeconomics, macroeconomics, econometrics, and quantitative methods as well as applied economics principles.
- Develop proficiency in statistical analysis, data mining, and machine learning techniques for analyzing complex economic data sets.
- Apply statistical methods, econometric techniques, and data visualization tools to analyze economic data and draw meaningful conclusions.
- Utilize programming languages and statistical software packages effectively for data manipulation and analysis.
- Develop the ability to critically evaluate economic theories and models, and apply them to real-world economic problems.
- Apply economic theory and data analytics techniques to identify and solve complex economic problems and make informed decisions.
- Effectively communicate economic analyses and findings to diverse audiences, both orally and in writing.



- Understand the intersections between economics, data analytics, and other fields such as computer science, business, and public policy.
- Understand the ethical considerations involved in economic analysis and data analytics, and adhere to professional standards in research and practice.
- Develop expertise in specific areas of economics and data analytics through elective courses, research projects, and practical experience.
- Develop the ability to conduct independent research, including formulating research questions, designing studies, collecting and analyzing data, and presenting findings.
- Gain hands-on experience with statistical software, data visualization tools, and other technologies used in economic analysis and data analytics.
- Work effectively in teams to solve complex problems and achieve common goals, demonstrating leadership and interpersonal skills.
- Conduct independent research, including formulating research questions, designing studies, and analyzing data to produce meaningful insights.
- Develop the skills and knowledge necessary to pursue careers in a variety of fields, including economic research, data analysis, financial services, consulting, and government.

### **Pedagogy of the programme**

The pedagogy for MSc in Economics and Data Analytics involves creating an engaging learning environment that integrates theory with practical application. The program emphasizes interactive lectures, group discussions, problem-solving activities, and hands-on projects. Field visits, household surveys, and dissertation work with faculty guidance enable students to analyze real-world economic issues, apply theoretical concepts, and enhance critical thinking skills. Collaboration and peer learning are encouraged, fostering teamwork and communication. Students gain practical experience with statistical software, enhancing their technological proficiency in applied economics and business. The curriculum also includes interdisciplinary studies, exposing students to intersections with fields like computer science, business, and public policy to provide a comprehensive understanding of economic phenomena and their implications. Projects and research assignments challenge students to address complex societal challenges, developing their analytical and problem-solving abilities. The program culminates in a capstone project or thesis, allowing students to apply their knowledge and skills to significant research questions or practical problems in economics and data analytics. Networking events, career fairs, and mentorship programs connect students with alumni and industry professionals, facilitating their transition into the workforce.



## Programme Structure

- The Master of Education (MED) program is structured over two years, divided into four semesters, comprising a total of 91 credits.
- The curriculum is meticulously designed to incorporate Core Courses, Discipline-Specific Electives, Multidisciplinary Courses, and MOOCs, ensuring a comprehensive and enriching learning journey.
- With a focus on meeting the current demands of the Government, non-government, and private sectors, the program offers a selection of nine discipline-specific electives, providing students with a broad range of courses to choose from.
- Throughout Semesters I, II, and III, students will specialize by selecting a Discipline Specific Elective and completing all related courses.
- To augment their learning experience, students are expected to complete one MOOCs course in each of the first three semesters.
- Following the completion of the second semester, students will embark on a two-month summer internship, where they will gain practical experience and submit a comprehensive report during the third semester.
- In the final semester (Semester IV), students will undertake a six-month Dissertation Work, allowing them to apply their acquired knowledge and skills in a practical setting and contribute meaningfully to the field of education.



**Semester and Course wise Credits**

Semester	Course Code	Discipline Specific Elective	IDE	CCC	SIP	Dissertation	Lab	Total Credits
<b>I</b>	MED101 (4) MED102 (4) MED103 (4) MED104 (4)	MED111 (4) MED112 MED113	MED114 MOOC (3)	-	-	-	MED103 (1)	<b>23</b>
<b>II</b>	MED201 (4) MED202 (4) MED203 (4)	MED211 (4) MED212 MED213	MED214 MOOC (3)	MED215 (4)	-	-	MED201 (2) MED202 (2) MED203 (2) MED215 (2)	<b>23</b>
<b>III</b>	MED301 (4) MED302 (4) MED303 (4)	MED311 (4) MED312 MED313	MED312 / MOOC (3)	MED313 (4)	MED314 (2)	-	MED301 (2) MED302 (2) MED311 (1)	<b>25</b>
<b>IV</b>	MED401(4)	-	-	-	-	MED411 (16)	MED401 (2)	-
<b>Total</b>	<b>44</b>	<b>12</b>	<b>09</b>	<b>08</b>	<b>02</b>	<b>16</b>	<b>--</b>	<b>91</b>
<b>Percentage</b>	<b>48.35</b>	<b>13.18</b>	<b>9.89</b>	<b>8.79</b>	<b>2.19</b>	<b>17.58</b>	<b>--</b>	<b>100</b>

**IDE:** Inter-disciplinary Electives

**CCC:** Common Compulsory Course

**SIP:** Summer Internship Project

# **Lab:** Credits are excluded from total credits to avoid double count.



आंध्रप्रदेश केंद्रीय विश्वविद्यालय  
**CENTRAL UNIVERSITY OF ANDHRA PRADESH**  
**Ananthapuramu**

M.Sc. Economics and Data Analytics

**Programme Structure with Course Titles**

Sl. No.	Course Code	Title of the Course	Credit Points	Credit Distribution		
				L*	T*	P*
<b>Semester I</b>						
1	MED101	Microeconomic Theory	4	3	1	
2	MED102	Macroeconomic Theory	4	3	1	
3	MED103	Computational Statistics	2	2		
		<b>Lab:</b> Computational Statistics	2			2
4	MED104	Econometrics Analysis	4	3	1	
5	<b>Elective-I: Any one of the following</b>		4	3	1	
	MED111	Indian Economy				
	MED112	Financial Economics				
	MED113	Behavioural Economics				
6	MED114	*IDE-I: MOOCs	3	3		
<b>Total</b>			<b>23</b>	<b>17</b>	<b>4</b>	<b>2</b>
<b>Semester II</b>						
1	MED201	Database for Economics	2	2		
		<b>Lab:</b> Database for Economics	2			2
2	MED202	Applied Econometrics	2	2		
		<b>Lab:</b> Applied Econometrics	2			2
3	MED203	Research Methodology and Data Analysis using SPSS	2	2		
		<b>Lab:</b> SPSS and LaTeX	2			2
4	<b>Elective-II: Any one of the following</b>		4	3	1	
	MED211	International Economics				
	MED212	Health Economics				
	MED213	Public Policy Analysis				
5	MED214	*IDE-II : MOOCs	3	3		
6	MED215	CCC-I: Artificial Intelligence and Machine Learning	2	2		
		<b>Lab:</b> Artificial Intelligence and Machine Learning	2			2
<b>Total</b>			<b>23</b>	<b>14</b>	<b>1</b>	<b>8</b>
<b>Semester III</b>						
1	MED301	Data Analytics with R	2	2		
		<b>Lab:</b> Data Analytics with R	2			2
2	MED302	Time Series Econometrics	2	2		
		<b>Lab:</b> Time Series Econometrics	2			2
3	MED303	Industrial Economics and Corporate Relations	4	3	1	
4	<b>Elective-II: Any one of the following</b>		4	3	1 <sup>#</sup>	1 <sup>#</sup>
	MED311	Economics of Artificial Intelligence <sup>#</sup>				
	MED312	Insurance Economics				
	MED313	Entrepreneurship Development				
5	MED312	IDE-III: MOOCs	3	3		
6	MED313	CCC-II: Mathematical Building and Financial Literacy	4	3	1	
7	MED314	Summer Internship Programme	2			2
<b>Total</b>			<b>25</b>	<b>16</b>	<b>2</b>	<b>7</b>





आंध्रप्रदेश केंद्रीय विश्वविद्यालय  
**CENTRAL UNIVERSITY OF ANDHRA PRADESH**  
**Ananthapuramu**

M.Sc. Economics and Data Analytics

Sl. No.	Course Code	Title of the Course	Credit Points	Credit Distribution		
				L*	T*	P*
<b>Semester IV</b>						
1	MED401	Data Analytics with Python	2	2		
		<b>Lab:</b> Data Analytics with Python	2			2
2	MED411	Dissertation	16			16
<b>Total</b>			<b>20</b>	<b>2</b>		<b>18</b>
<b>Grand Total</b>			<b>91</b>	<b>49</b>	<b>7</b>	<b>35</b>

**Note :** \*As per the choice of the students and the instructor # Lab for MED311 and tutorial for MED312 and MED313

**L:** Lectures; **P:** Practical; **T:** Tutorials

**Semester-Wise Credit Distribution**

Semester	Total Credits	Cumulative credit at the end of the semester
<b>I</b>	23	23
<b>II</b>	23	46
<b>III</b>	25	71
<b>IV</b>	20	91

**Required Credit :** The minimum required credit to be earned by the student to award the degree is 91. However, they can earn credits in excess of 91 by taking other courses. The upper limit will be 97 credits.

**Assessment Pattern:**

- **Theory Course:** 40% of internal [formative evaluation -- two best out of three tests (for a maximum of 15 marks each = 30 marks) - and seminar/ assignments/attendance (10 marks)] and 60% (summative evaluation - semester end examination).
- **Lab Components:** 60% of internal exam/lab and 40% (summative evaluation - semester end examination).

**End Semester Examination:** Maximum Marks: 60 Time: 3 Hours

**Dissertation/Project Report:** Evaluation: 60 marks Viva-Voce: 40 marks



### **Important Information to Students**

1. Eligibility: A Bachelor's degree in Economics with at least 50% marks in aggregate and at least 50% marks in Economics with Mathematics/Statistics; Or Bachelor's degree with at least 60% marks in aggregate any of the allied subjects viz. Commerce, Statistics, Mathematics, Engineering or any of the Social Sciences subjects with Mathematics/Statistics.
2. The minimum duration for completion of the programme is four semesters (two academic years) and the maximum duration is eight semesters (four academic years) or as per amendments made by the regulatory bodies from time to time.
3. A student should attend at least 75% of the classes, seminars, practicals in each course of study.
4. All theory courses in the programme carry a Continuous Internal Assessment (CIA) component to a maximum of 40 marks and Semester End Examination (SEE) for a maximum of 60 marks. The minimum pass marks for a course is 40%.
5. All lab components carry a Continuous Internal Assessment (CIA) component to a maximum of 60 marks and Semester End Practical Examination (SEE) for maximum of 40 marks. The minimum pass marks for a course in 40%.
6. A student should pass separately in both CIA and the SEE, i.e., a student should secure 16 (40%) out of 40 marks for theory and 24 (40%) out of 60 marks in the lab components in CIA. A student should secure 24 (40%) out of 60 marks for theory and 16 (40%) out of 40 marks for lab components in the SEE.
7. There are 3 CIA tests for each course per semester from which the best 2 performances are considered for the purpose of calculating the marks in CIA. A record of the continuous assessment is maintained by the academic unit. A record of the continuous assessment is maintained by the academic unit.
8. Each CIA contains 15 marks, out of the best 2 tests scores are considered for 30 marks. Out of the remaining 10 marks, 5 marks are awarded for assignments, class presentations and class participation and the remaining 5 marks are awarded for punctuality, and attendance of the student.



आंध्रप्रदेश केंद्रीय विश्वविद्यालय  
**CENTRAL UNIVERSITY OF ANDHRA PRADESH**  
**Ananthapuramu**

**M.Sc. Economics and Data Analytics**

**Marks for the Attendance will be considered as follows:**

<b>S.NO</b>	<b>ATTENDANCE %</b>	<b>MARKS</b>
<b>1</b>	<b>95% or more</b>	<b>5</b>
<b>2</b>	<b>90-94%</b>	<b>4</b>
<b>3</b>	<b>85-89%</b>	<b>3</b>
<b>4</b>	<b>80-84%</b>	<b>2</b>
<b>5</b>	<b>75-79%</b>	<b>1</b>

9. A student failing to secure the minimum pass marks in the CIA is not allowed to take the semester end examination of that course. S/he has to redo the course by attending special classes for that course and get the pass percentage in the internal tests to become eligible to take the end semester examination.
10. Semester-end examination shall consist of objective type questions, descriptive type questions, short answer questions and case studies or any other recommended by the Board of Studies (BoS).
11. Students failing a course due to lack of attendance should redo the course.
12. Re-evaluation is applicable only for SEE papers and shall not be entertained for other components such as lab/practical /thesis/ dissertation/ internship etc.
13. An on-campus elective course is offered only if 10 or 50% of the students registered, whichever is higher.