FACULTY OF ECONOMICS AND BUSINESS

SYLLABUS
of
Bachelor of Science (Economics)
(Semester V-VI)
Under Credit-Based Continuous Evaluation Grading System)

Session: 2025-26

The Heritage Institution
KANYA MAHA VIDYALAYA
JALANDHAR
(Autonomous)

Kanya Maha Vidyalaya, Jalandhar (Autonomous)

SCHEME AND CURRICULAM OF EXAMINATION OF THREE YEAR DEGREE PROGRAM

Bachelor of Science (Economics)

Session: 2025-2026

Semester V

Course Code		Course Name	Course Type	Hours Per Week L-T-P	Credits L-T-P	Total Credits	Total Marks	L Marks	P Marks	CA Marks	Examination time (in Hours)
BECL-5421 BECL-5031 BECL-5431		Punjabi(Compulsory) [1]Basic Punjabi [2]Punjab History and Culture	C	4	4-0-0	4	100	80	-	20	3
BECL-5212		English (Compulsory)	C	4	4-0-0	4	100	80	-	20	3
BECL-5175		**Economics** **(**Economics of Development)	C	4-0-0	4-0-0	4	100	80		20	3
BECL-5453		**Quantitative Techniques** (Quantitative Techniques-V)	E	4-0-0	4-0-0	4	100	80	-	20	3
BECM-5333	I	**Mathematics** (Dynamics)	E	7-0-0 (4-0-0 + 3-0-0)	7-0-0 (4-0-0 + 3-0-0)	7	175 (100 + 75)	140 (80 + 60)	-	35 (20+ 15)	3+3
	II	**Mathematics** (Number Theory)									
BECM-5134		**Computer Science** (Database Management System)	E	3-0-2	3-0-1	4	100	50	30	20	3+3
	P	**Computer Science** (Database Management System) (PRACTICAL)									
BECM-5124		**Computer Applications (Vocational)** (Internet and Web Designing)	E	3-0-2	3-0-1	4	100	50	30	20	3+3
	P	**Computer Applications** **(**Internet and Web Designing) (PRACTICAL)									
*SECI-5541		Innovation, Entrepreneurship and Creative Thinking	AC	2-0-0	2-0-0	2	50	40	-	10	1

C-Compulsory
E-Elective

AC- Audit Course

[1] Special paper in lieu of Punjabi (Compulsory).

[2] Special paper in lieu of Punjabi (Compulsory) for those students who are not domicile of Punjab.

***Marks of these papers will not be added in total marks and only grades will be provided.**

Kanya Maha Vidyalaya, Jalandhar (Autonomous)

SCHEME AND CURRICULAM OF EXAMINATION OF THREE YEAR DEGREE PROGRAM

Bachelor of Science (Economics)

Session: 2025-2026

Semester VI

Course Code		Course Name	Course Type	Hours Per Week L-T-P	Credits L-T-P	Total Credits	Total Marks	L Marks	P Marks	CA Marks	Examination time (in Hours)
BECL-6421 BECL-6031 BECL-6431		Punjabi(Compulsory) [1]Basic Punjabi [2]Punjab History and Culture	C	4	4-0-0	4	100	80	-	20	3
BECL-6212		English (Compulsory)	C	4	4-0-0	4	100	80	-	20	3
BECL-6175		**Economics** (Quantitative Methods for Economists)	C	4-0-0	4-0-0	4	100	80		20	3
BECL-6453		**Quantitative Techniques** (Quantitative Techniques-VI)	E	4-0-0	4-0-0	4	100	80	-	20	3
BECM-6333	I	Mathematics (Linear Algebra)	E	7-0-0 (4-0-0 + 3-0-0)	7-0-0	7	175 (100 + 75)	140 (80 + 60)		35 (20+ 15)	3+3
	II	Mathematics (Numerical Analysis)									
BECM-6134		**Computer Science** (Information Technology)	E	3-0-2	3-0-1	4	100	50	30	20	3+3
	P	**Computer Science** (Information Technology) (PRACTICAL)									
BECM-6124		**Computer Applications (Vocational)** (Business Data Processing)	E	3-0-2	3-0-1	4	100	50	30	20	3+3
	P	**Computer Applications (Business Data Processing)** (PRACTICAL)									
		Total Credits with Quantitative Techniques Total Credits with Mathematics				24 27					

C-Compulsory
E-Elective

AC- Audit Course

[1] Special paper in lieu of Punjabi (Compulsory).

[2] Special paper in lieu of Punjabi (Compulsory) for those students who are not domicile of Punjab.

***Marks of these papers will not be added in total marks and only grades will be provided.**

Session 2025-26
Bachelor Of Arts / Bachelor Of Science (Economics) Semester-V
Punjabi (Compulsory)
COURSE CODE- BARL/BECL -5421

COURSE OUTCOMES

CO1:ਚੋਣਵੀਆਂਪੰਜਾਬੀਕਹਾਣੀਆਂਨੂੰ ਪੜ੍ਹਾਉਣ ਦਾਮਨੋਰਥਵਿਦਿਆਰਥੀਆਂਅੰਦਰਕਹਾਣੀਆਂਪ੍ਰਤੀਦਿਲਚਸਪੀ, ਸੂਝ ਨੂੰ ਪੈਦਾਕਰਨਾ ਹੈ।

CO2:ਨਾਵਲ 'ਏਹੁ ਹਮਾਰਾਜੀਵਣਾ'(ਦਲੀਪਕੌਰਟਿਵਾਣਾ)ਨੂੰ ਸਿਲੇਬਸ ਵਿਚਸ਼ਾਮਿਲਕਰ ਕੇ ਵਿਦਿਆਰਥੀਆਂਅੰਦਰਨਾਵਲਪੜ੍ਹਣ ਦੀ ਰੁਚੀ ਨੂੰ ਪੈਦਾਕਰਨਾ ਹੈ ਅਤੇ ਇਸ ਸਾਹਿਤ ਰੂਪ ਨਾਲਜੋੜਣਾ ਹੈ।

CO3:ਪੈਰ੍ਹਾਰਚਨਾਕਰਨਨਾਲਵਿਦਿਆਰਥੀਆਪਣੀਗੱਲ ਨੂੰ ਕਹਿਣ ਦੀ ਜਾਚਸਿੱਖਣਗੇ ਅਤੇ ਇਹਦਿਮਾਗੀਕਸਰਤਵਿਚ ਸਹਾਈਹੋਵੇਗੀ।ਸਰਲਅੰਗਰੇਜ਼ੀਪੈਰ੍ਹੇ ਦਾਪੰਜਾਬੀਵਿਚਅਨੁਵਾਦਦਾਮਨੋਰਥਵਿਦਿਆਰਥੀਆਂ ਦੀ ਬੁੱਧੀ ਨੂੰ ਤੀਖਣਕਰਦਿਆਂ ਉਨਾਂ ਦੀ ਲਿਖਣਪ੍ਰਤਿਭਾ ਨੂੰ ਉਜਾਗਰਕਰਨਾ ਹੈ।

CO4:ਵਾਕਾਤਮਕਜੁਗਤਾਂ : ਮੇਲ ਤੇ ਅਧਿਕਾਰਨੂੰ ਪੜ੍ਹਾਉਣ ਦਾਮਨੋਰਥਵਿਦਿਆਰਥੀਆਂਅੰਦਰਭਾਸ਼ਾ ਦੀ ਅਮੀਰੀ ਅਤੇ ਬਾਰੀਕੀਆਂਨੂੰ ਸਮਝਣਲਈਵੱਖਰੇ -ਵੱਖਰੇ ਸਿਧਾਂਤਾਂਦਾਵਿਕਾਸ ਕਰਨਾ ਹੈ।

Session 2025-26
Bachelor of Arts / Bachelor of Science (Economics) Semester-V
Punjabi (Compulsory)
COURSE CODE- BARL/ BECL -5421

ਸਮਾਂ : 3 ਘੰਟੇ **Maximum Marks: 100**
Theory: 80
CA: 20

ਅੰਕ ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

1. ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਚਾਰ (A-D) ਸੈਕਸ਼ਨ ਹੋਣਗੇ।ਸੈਕਸ਼ਨ A-D ਤੱਕ ਦੇ ਪ੍ਰਸ਼ਨ ਕ੍ਰਮਵਾਰ ਯੂਨਿਟ I-IV ਵਿਚੋਂ ਪੁੱਛੇ ਜਾਣਗੇ। ਹਰ ਯੂਨਿਟ ਵਿਚੋਂ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।
2. ਵਿਦਿਆਰਥੀ ਨੇ ਕੁੱਲ ਪੰਜ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਸੈਕਸ਼ਨ ਵਿਚੋਂ ਇਕ ਪ੍ਰਸ਼ਨ ਕਰਨਾ ਲਾਜ਼ਮੀ ਹੈ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਸੈਕਸ਼ਨ ਵਿਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।
3. ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ 16 ਅੰਕ ਹਨ।
4. ਪੇਪਰ ਸੈੱਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋਂ ਵੱਧ ਚਾਰ ਉਪ ਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕਰ ਸਕਦਾ ਹੈ।

ਪਾਠਕ੍ਰਮ ਅਤੇ ਪਾਠ ਪੁਸਤਕਾਂ

ਯੂਨਿਟ-I

ਚੋਣਵੀਆਂਪੰਜਾਬੀਕਹਾਣੀਆਂ
(ਸੰਪਾ.ਡਾ.ਰਮਿੰਦਰਕੌਰ, ਪਬਲੀਕੇਸ਼ਨ ਬਿਊਰੋ, ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ, 2018)

ਲੇਖਕ	ਕਹਾਣੀਕਹਾਣੀ ਸੰਗ੍ਰਹਿ
ਅਜੀਤਕੌਰ	ਨਿਓ ਯੀਅਰ ਮੌਤ ਅਲੀਬਾਬੇ ਦੀ
ਜਿੰਦਰ	ਸੌਰੀ
ਜਸ਼ਮ	
ਸੁਖਜੀਤ	ਹਜ਼ਾਰ ਕਹਾਣੀਆਂ ਦਾ ਬਾਪ ਮੈ ਇੰਜੁਆਏ ਕਰਦੀਹਾਂ
ਜਤਿੰਦਰ ਹਾਂਸ	ਰਾਹੂ ਕੇਤੂ
ਈਸ਼ਵਰਦਾ ਜਨਮ	
ਪ੍ਰੇਮ ਪ੍ਰਕਾਸ਼	ਅਰਜਨ ਛੇੜ ਗਡੀਰਨਾ ਕੁਝ ਅਣਕਿਹਾ ਵੀ
ਚੰਦਨ ਨੇਗੀ	ਹਰਖ ਸੋਗ
ਹਰਖ ਸੋਗ	
ਜਸਵਿੰਦਰ ਸਿੰਘ	ਖੂਹ ਖਾਤੇ
ਖੂਹ ਖਾਤੇ	
ਗੁਰਦੇਵ ਸਿੰਘ	ਰੁਪਾਣਾ ਸ਼ੀਸ਼ਾ ਸ਼ੀਸ਼ਾ ਅਤੇ ਹੋਰ ਕਹਾਣੀਆਂ

(ਵਿਸ਼ਾ-ਵਸਤੂ/ਸਾਰ / ਪਾਤਰ ਚਿਤਰਨ)

ਯੂਨਿਟ-II

ਨਾਵਲ : ਏਹੁ ਹਮਾਰਾ ਜੀਵਣਾ (ਦਲੀਪ ਕੌਰ ਟਿਵਾਣਾ)
(ਵਿਸ਼ਾ-ਵਸਤੂ/ਸਾਰ / ਬਿਰਤਾਂਤਕ ਜੁਗਤਾਂ)

ਯੂਨਿਟ-III

ਲਗਪਗ 200 ਸ਼ਬਦਾਂ ਵਿਚ ਪੈਰ੍ਹਾ ਰਚਨਾ

ਸਰਲ ਅੰਗਰੇਜ਼ੀ ਪੈਰ੍ਹੇ ਦਾ ਪੰਜਾਬੀ ਵਿਚ ਅਨੁਵਾਦ

ਯੂਨਿਟ-IV

ਵਿਆਕਰਣ :
(ੳ) ਨਾਂਵ ਵਾਕੰਸ਼
(ਅ) ਮੇਲ ਤੇ ਅਧਿਕਾਰ

Session 2025-26
Bachelor of Arts / Bachelor of Science (Economics) Semester V
Basic Punjabi (In lieu of Punjabi Compulsory)
COURSE CODE- BARL/BECL -5031

COURSE OUTCOMES

CO1:ਵਿਦਿਆਰਥੀਸਾਹਿਤ ਅਤੇ ਲੋਕ ਸਾਹਿਤ,ਲੋਕਕਾਵਿ,ਲੋਕਵਾਰਤਕਬਿਰਤਾਂਤ ਦੀ (ਮੁੱਢਲੀਜਾਣਪਛਾਣ)ਬਾਰੇ ਜਾਣ ਸਕਣਗੇ।

CO2:ਵਿਦਿਆਰਥੀਸੁਹਾਗ,ਘੋੜੀਆਂ, ਸਿੱਠਣੀਆਂ ਦੀ (ਮੁੱਢਲੀਜਾਣਪਛਾਣ)ਬਾਰੇ ਜਾਣ ਸਕਣਗੇ।

CO3:ਵਿਦਿਆਰਥੀਗਿੱਧਾ (ਮੁੱਢਲੀਜਾਣਪਛਾਣ),ਭੰਗੜਾ (ਮੁੱਢਲੀਜਾਣਪਛਾਣ),ਝੂਮਰ (ਮੁੱਢਲੀਜਾਣਪਛਾਣ)ਬਾਰੇ ਜਾਣ ਸਕਣਗੇ।

CO4:ਵਿਦਿਆਰਥੀਲੋਕ ਖੇਡਾਂ (ਮੁੱਢਲੀਜਾਣਪਛਾਣ),ਲੋਕਤਮਾਸ਼ੇ (ਮੁੱਢਲੀਜਾਣਪਛਾਣ),ਲੋਕਕਲਾਵਾਂ (ਮੁੱਢਲੀਜਾਣਪਛਾਣ) ਦਾ ਵਿਹਾਰਕਅਧਿਐਨਕਰ ਸਕਣ ਦੇ ਸਮਰੱਥ ਹੋ ਸਕਣਗੇ।

Session 2025-26
Bachelor of Arts / Bachelor of Science (Economics) Semester V
Basic Punjabi (In lieu of Punjabi Compulsory)
COURSE CODE- BARL/BECL -5031

ਸਮਾਂ: 3 ਘੰਟੇ **Maximum Marks : 100**
Theory :80
CA :20

ਅੰਕਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕਲਈਹਦਾਇਤਾਂ

1. ਪ੍ਰਸ਼ਨਪੱਤਰ ਦੇ ਚਾਰ (A-D) ਸੈਕਸ਼ਨਹੋਣਗੇ।ਸੈਕਸ਼ਨA-D ਤੱਕ ਦੇ ਪ੍ਰਸ਼ਨਕ੍ਰਮਵਾਰ ਯੂਨਿਟI-IV ਵਿਚੋਂਪੁੱਛੇ ਜਾਣਗੇ। ਹਰ ਯੂਨਿਟਵਿਚੋਂ ਦੋ ਪ੍ਰਸ਼ਨਪੁੱਛੇ ਜਾਣਗੇ।
2. ਵਿਦਿਆਰਥੀ ਨੇ ਕੁੱਲ ਪੰਜਪ੍ਰਸ਼ਨਕਰਨੇ ਹਨ।ਹਰ ਸੈਕਸ਼ਨਵਿਚੋਂਇਕਪ੍ਰਸ਼ਨਕਰਨਾਲਾਜ਼ਮੀਹੈ।ਪੰਜਵਾਂਪ੍ਰਸ਼ਨਕਿਸੇ ਵੀ ਸੈਕਸ਼ਨਵਿਚੋਂਕੀਤਾਜਾ ਸਕਦਾਹੈ।
3. ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ 16ਅੰਕਹਨ।
4. ਪੇਪਰ ਸੈੱਟਕਰਨਵਾਲਾਜੇਕਰਚਾਹੇ ਤਾਂਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡਅੱਗੋਂਵੱਧਤੋਂਵੱਧਚਾਰਉਪ ਪ੍ਰਸ਼ਨਾਂਵਿਚਕਰ ਸਕਦਾਹੈ।

ਪਾਠਕ੍ਰਮ

ਯੂਨਿਟ-I

ਸਾਹਿਤ ਅਤੇ ਲੋਕ ਸਾਹਿਤ (ਮੁੱਢਲੀਜਾਣਪਛਾਣ)
ਲੋਕਕਾਵਿ (ਮੁੱਢਲੀਜਾਣਪਛਾਣ)
ਲੋਕਵਾਰਤਕਬਿਰਤਾਂਤ (ਮੁੱਢਲੀਜਾਣਪਛਾਣ)

ਯੂਨਿਟ-II

ਸੁਹਾਗ (ਮੁੱਢਲੀਜਾਣਪਛਾਣ)
ਘੋੜੀਆਂ (ਮੁੱਢਲੀਜਾਣਪਛਾਣ)
ਸਿੱਠਣੀਆਂ (ਮੁੱਢਲੀ ਜਾਣ ਪਛਾਣ)

ਯੂਨਿਟ-III

ਗਿੱਧਾ (ਮੁੱਢਲੀਜਾਣਪਛਾਣ)
ਭੰਗੜਾ (ਮੁੱਢਲੀਜਾਣਪਛਾਣ)
ਝੂਮਰ (ਮੁੱਢਲੀਜਾਣਪਛਾਣ)

ਯੂਨਿਟ-IV

ਲੋਕ ਖੇਡਾਂ (ਮੁੱਢਲੀਜਾਣਪਛਾਣ)
ਲੋਕਤਮਾਸ਼ੇ (ਮੁੱਢਲੀਜਾਣਪਛਾਣ)
ਲੋਕਕਲਾਵਾਂ (ਮੁੱਢਲੀਜਾਣਪਛਾਣ)

Session 2025-26
Bachelor of Arts / Bachelor of Science (Economics) Semester V
English (Compulsory)
Course Code: BARL/BECL -5212

COURSE OUTCOMES

After passing this course, the students will be able to:
CO 1: analyze and appreciate the dramatic technique, plot development and art of characterisation in the prescribed play, "All My Sons" by Arthur Miller
CO 2: widen their knowledge about various literary devices used in poetry such as tone, style, imagery, figures of speech, symbolism etc. thorough the study of prescribed poems from the text "Poems of Nature and Culture"
CO 3: develop the knowledge, skills and capabilities for effective business writing such as formal letter writing
CO 4: will develop skills for writing job application and suitable resume along with.

Session 2025-26
Bachelor of Arts / Bachelor of Science (Economics) Semester V
English (Compulsory)
Course Code: BARL/BECL -5212

Examination Time: 3 Hrs. **Max. Marks: 100**
Theory: 80
CA: 20

Instructions for the Examiner:
Section A: Three questions from the play *All My Sons* from Unit I and three questions from *Poems of Nature and Culture* from Unit II will be set. The students will be required to answer any five, each carrying four marks (100 words each).
(5×4=20)

Section B: Four questions based on character, tone, plot and theme(s) from the play *All My Sons* from Unit I will be set and the students will be required to attempt any two, each carrying ten marks (400 words each).
(2×10= 20)
Section C: Four questions based on the central idea, theme, tone or style etc. of the prescribed poems from the textbook, *Poems of Nature and Culture* from Unit II will be set. The students will have to attempt any two of these, each carrying ten marks (400 words each). The questions can also be set based on stanzas with reference to context.
(2×10= 20)
Section D: Two questions with internal choice will be set from Unit III (formal letter) and Unit IV (Job application and Resume Writing) each carrying ten marks.
(2×10=20)

Unit I

All My Sons by Arthur Miller

Unit II

Poems of Nature and Culture:

William Wordsworth: The World is Too Much with Us
Gordon Lord Byron: She Walks in Beauty
P.B. Shelly: Ozymandias
Alfred Lord Tennyson: In Memoriam
Mathew Arnold: Dover Beach
Wilfred Owen: Strange Meeting
Robert Graves: The Portrait
W.H. Auden: The Unknown Citizen
Ted Hughes: The Thought-Fox
Sylvia Plath: Mirror
Rabindranath Tagore: False Religion
Nissim Ezekiel: Night of Scorpion

Unit III

Formal letter

Unit IV

Job Application and Resume Writing

Texts Prescribed:

1. *All My Sons* by Arthur Miller
2. *Poems of Nature and Culture*, Guru Nanak Dev University, Amritsar
3. *Oxford Guide to Effective Writing and Speaking* by John Seely.

Bachelor of Arts / Bachelor of Science (Economics) Semester –V
Session 2025-26
Course Code: BARL/ BECL-5175
Economics (Economics of Development)

Course outcomes:

After passing this course, students will be able to:

CO1: learn the measurement of economic development and understand the economic problems of developing and least developed countries
CO2: examine the models of growth critically and recognize the importance of their underlying assumptions
CO3: analyze the different strategies of economic development and policy implications of export promotion and import substitution strategies
CO4: understand the role of planning and contribution of capital formation and choice of techniques in the development of UDCs and their changing landscape after globalization and liberalization

Bachelor of Arts/ Bachelor of Science (Economics) Semester –V
Session 2025-26
Course Code: BARL/BECL-5175
Economics (Economics of Development)

Time: 3 Hours **Max. Marks: 100**
L-T-P (Credits):4-0-0 **Theory: 80**
CA: 20

Note: Instructions for the Paper Setter:
Two questions, each carrying 16 marks, from each of the Units I-IV (i.e. a total of eight questions) are to be set. Candidates are required to attempt five questions, selecting at least one from each unit. The fifth question may be attempted from any unit.

UNIT–I

Economic Development: Meaning and Measurement, Economic and Non-Economic Factors, Characteristics of Developing and Least Developed Countries. Human Development Index, Concept of Sustainable Development.
Dualism: Social and Technological Dualism
Lewis Model of Unlimited Supply of Labour, Problems of Unemployment and Disguised Unemployment.

UNIT–II

Models of Growth: Classical, Marxian, Schumpeter, Harrod-Domar, and Solow.

UNIT–III

Rostow's theory of Stages of Growth
Strategies of Economic Development-Balanced vs. Unbalanced Growth; Theory of Big Push; Leibenstein's Critical Minimum Efforts Thesis
Export Promotion and Import Substitution.

UNIT–IV

Capital Formation – Meaning and Sources; Choice of Techniques
Role of Planning in Under Developed Countries, Need, Objective, Strategy, Types and Problems of Planning.
Case Study: Growth Models for the development of different areas of Punjab

Suggested Readings:

1. Meier, G.M.(1995), *Leading Issues in Economic Development*, Oxford University Press, Delhi.
2. Thirlwall, A.P. (2011), *Economics of Development*, Palgrave Macmillan.
3. Todaro, M.P. and Smith, S.C. (2018), *Economic Development*, Pearson India
4. Misra and Puri (2016), *Economics of Development and Planning*, Himalaya Publishing House, New Delhi
5. Jhingan, M.L.(2011), *The Economics of Development and Planning*, Vrinda Publications Pvt. Ltd., Delhi

Note: The latest editions of the books are recommended.

Bachelor of Arts/ Bachelor of Science (Economics) Semester–V
Session 2025-26
Course Code: BARL/BECL-5453
Quantitative Techniques (Quantitative Techniques–V)

Course outcomes:
After the successful completion of this course, the students will be able to
CO1: understand the basics of methods of estimation and the process of formulation and of testing the hypothesis.
CO2: understand the theoretical details of sampling distributions
CO3: understand the basic applications of sampling distributions.
CO4: understand ANOVA to split and analyze the variations in economic phenomenon.

Bachelor of Arts/ Bachelor of Science (Economics) Semester–V

Session 2025-26
Course Code: BARL/BECL-5453
Quantitative Techniques (Quantitative Techniques–V)

Time: 3 Hours **Max. Marks: 100**
L-T-P (Credits):4-0-0 **Theory: 80**
CA: 20

Note: Instructions for the Paper–Setter:
Two questions, each carrying 16 marks, from each of the Units I-IV (i.e., a total of eight questions) are to be set. Candidates are required to attempt five questions, selecting at least one from each unit. The fifth question may be attempted from any unit.

UNIT–I

Statistical Inference: Point & Interval Estimation, Properties of a Good Estimator, Maximum Likelihood Method of Estimation and derivation of mean and variance of Binomial, Poisson and Normal distributions using MLE. Basic Concepts of Null and Alternative Hypotheses, Types of Errors, One-Tailed and Two-Tailed Tests, Power of Test, Critical Region.

UNIT–II

Sampling Distributions: Derivation of properties of Z, T, Chi-Square and F distributions.

UNIT–III

Tests of significance based upon the distribution of Z, t, F and Chi-square.

UNIT–IV

Analysis of Variance: Introduction, Assumptions, Techniques of Analyzing Variance-Analysis of Variance of one-way and two-way classification.
Practical: t-test with any Statistical Software

Suggested Readings:
1. Gupta and Kapoor(2014) , *Fundamentals of Mathematical Statistics* , Sultan Chand & Sons, New Delhi
2. Rangi S.S.(2016), Statistical Techniques, S. Vikas &Co. (Publishing House) India.
Note: The latest editions of the books are recommended.

Bachelor of Arts/ Bachelor of Science (Economics) Semester–V
Session: 2025-26
Course Title: Mathematics (Dynamics)
Course Code: BARM /BECM -5333(I)

Course Outcomes
After passing this course, the students will be able to:
CO 1: Demonstrate the basic relations between distance, time, velocity and acceleration, manage to solve the problems of Newton's Laws of Motion and the motion of particles connected by a string.
CO 2: Illustrate motion along a smooth inclined plane. Solve different types of problems with Variable Acceleration. Discuss Simple Harmonic Motion.
CO 3: Understand the concept of projectile, oscillating system.
CO 4: Define Work, Power and Energy and explain their relationship. Use measurement tools to apply the concepts of Work and power to solve real life problems. Identify the different types of energy.

Bachelor of Arts /Bachelor of Science (Economics) Semester–V
Session: 2025-26
Course Title: Mathematics (Dynamics)
Course Code: BARM/ BECM-5333(I)

Examination Time: 3 Hours | Max. Marks: 100
L T P | Theory: 80
4 0 0 | CA: 20

Instructions for the paper setter:
Eight questions of equal marks (16 marks each) are to be set, two in each of the four Sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any Section. The question paper must contain 30% of the article/theory from the syllabus.

Unit I

Rectilinear motion in a straight line with uniform acceleration, Newton's laws of motion. Motion of two particles connected by a string.

Unit II

Motion along a smooth inclined plane, Variable acceleration, Simple Harmonic Motion.

Unit III

Curvilinear motion of particle in a plane, Definition of velocity and acceleration, projectiles, velocity and direction of motion of a projectile after a given time, projectiles on an inclined plane. Oscillations: Free Vibrations, Simple Pendulum, Conical Pendulum.

Unit IV

Work, Power and Energy: Kinetic and Potential energy, Conservative forces. Theorem of conservation of energy. Work done against gravity.

Text Book:

R. Kumar, Fundamentals of Dynamics, Pardeep Publications, Jalandhar city, second edition, 2004

Reference Books:

1.F. Chorlton, Text Book of Dynamics, CBS Publishers, New Delhi, second edition, 2004 (Scope in chapters 3,8).

2. S.R. Gupta, Elementary Analytical Dynamics, S. Chand and Company, New Delhi, Fourteenth Edition, 1983(Scope in chapters 1,2,3)

Bachelor of Arts/ Bachelor of Science (Economics) Semester–V
Session: 2025-26
Course Title: Mathematics (Number Theory)
Course Code: BARM/ BECM-5333(II)

Course Outcomes

Successful completion of this course will enable the students to:

CO 1: Prove results involving divisibility and greatest common divisors.

CO 2: Find solutions of specified linear Diophantine equation, basic properties of Congruences.

CO 3: Solve system of linear congruences. Apply Fermat's and Wilson's theorem to solve numerical problems.

CO 4: Apply Euler's theorem and apply properties of phi functions in real world problems. Understand application of important arithmetic functions.

Bachelor of Arts/ Bachelor of Science (Economics) Semester–V
Session: 2025-26
Course Title: Mathematics (Number Theory)
Course Code: BARM/ BECM-5333(II)

Examination Time: 3 Hours Max. Marks: 75
L T P Theory: 60
3 0 0 CA: 15

Instructions for the Paper Setter:
Eight questions of equal marks (12 marks each) are to be set, two in each of the four Sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any Section. The question paper must contain 30% of the article/theory from the syllabus.

Unit I

The division algorithm, The greatest common divisor, least common multiple, The Euclidean algorithm.

Unit II

The Diophantine equation ax + by = c, Prime numbers and their distribution, the fundamental theorem of arithmetic, Basic properties of congruences.

Unit III

Linear congruences, Special divisibility tests, Chinese remainder theorem, The Fermat's theorem, Wilson's theorem

Unit IV

Euler's Phi function, Euler's theorem, some properties of the Phi Function, σ and τ functions, Mobius Inversion formula, Greatest integer function

Text Book:

D. M. Burton, Elementary Number Theory, Mc Graw-Hill, seventh edition, 2010.

Reference Book:

Niven and Zuckerman, An Introduction to the theory of Numbers, John Willey & Sons, 1991.

Bachelor of Arts / Bachelor of Science (Economics) - Semester–V
Session 2025-26
COURSE CODE: BARM/ BECM -5134

COMPUTER SCIENCE
(DATA BASE MANAGEMENT SYSTEM)

Course Outcomes:
After passing course the student will be able to:
CO1: Understand data, database and database models.
CO2: Gain knowledge of normalization, security and recovery of database.
CO3: Create, manage and access database using SQL.
CO4: Comprehend the application of programming language constructs in database access.

Bachelor of Arts / Bachelor of Science (Economics) - Semester–V
Session 2025-26
COURSE CODE: BARM/ BECM -5134
COMPUTER SCIENCE
(DATA BASE MANAGEMENT SYSTEM)
(THEORY)

Examination Time: 3 Hrs. **Max. Marks: 100**
Theory: 50
L-T-P: 3-0-1 **Practical: 30**
Credits: 4 **CA: 20**

Instructions for Paper Setter -
Eight questions of equal marks (10 marks each) are to be set, two in each of the four sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be divided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section.

UNIT–I

DBMS: Introduction to database management system, Components of DBMS, Three Level Database System Architecture, ER. Diagrams. Data Models, Hierarchical Model, Network Model and Relational Model, Relational Databases, Relational Algebra and Calculus.

UNIT–II

Normalization: Introduction, Normal Forms: 1NF, 2NF, 3NF, BCNF, 4NF, 5NF.
Database Security: Protection, Integrity.
Recovery: Introduction, Recovery Techniques: Log Based Recovery and Shadow Paging.
Concurrency Control: Introduction, Concurrency control with locking methods, Two Phase locking, Precedence graph, Concurrency control based on timestamp ordering, Concurrency control based on optimistic scheduling.

UNIT–III

SQL * PLUS: Introduction to Oracle , Features of Oracle .
SQL Statements: DDL, DML, DCL, TCL, constraints, Join methods & Sub query, Union, Intersection, Built in Functions, View, and Security amongst users, Sequences, indexing object

UNIT–IV

PL/SQL: Introduction to PL/SQL. Cursors – Implicit & Explicit. Procedures, Functions & Packages, Database Triggers.

References/Textbooks:

1. C. J. Date, An Introduction to Database Systems, Pearson Education 2000.
2. F. Korth & Silverschatz, A., Database System Concepts, Tata McGraw Hill, 2010.
3. Elmasri & Navathe, Fundamentals of Database Systems, Addison-Wesley, 2011.
4. B.C.Desai, An Introduction to Database Management System, Galgotia Publication, 1991.
5. Ivan Bayross, SQL, PL/SQL - The Programming Language of Oracle, BPB Publications, 2010.

6. Gurvinder Singh, Parteek Bhatia, Simplified Approach to DBMS, Kalyani Publishers, 2016.
7. Anshuman Sharma, Fundamentals of DBMS, Lakhanpal Publications, 4th Edition.

Note: The latest editions of the books should be followed.

Bachelor of Arts / Bachelor of Science (Economics) - Semester–V
Session 2025-26
COURSE CODE: BARM/ BECM -5134

COMPUTER SCIENCE
(DATA BASE MANAGEMENT SYSTEM)
(PRACTICAL)

Examination Time: 3 Hrs. **Max. Marks: 100**

Theory: 50

L-T-P: 3-0-1 **Practical: 30**

Credits: 4 **CA: 20**

Lab on database management system.

Bachelor of Arts / Bachelor of Science(Economics) Semester-V
Session 2025-26
COURSE CODE: BARM/ BECM-5124

COMPUTER APPLICATIONS (VOCATIONAL)
(INTERNET AND WEB DESIGNING)

Course Outcomes:
After passing course the student will be able to:
CO1: Comprehend basics of internet and email along with their effective use.
CO2: Apply HTML for development of static webpages.
CO3: Implement styling in webpages through the use of CSS.
CO4: Apply JavaScript code for interaction with content of webpages.

Bachelor of Arts / Bachelor of Science(Economics) Semester V
Session 2025-26
COURSE CODE: BARM/ BECM-5124
COMPUTER APPLICATIONS (VOCATIONAL)
(INTERNET AND WEB DESIGNING
(THEORY)

Examination Time: 3 Hrs. **Max. Marks: 100**
Theory: 50
L-T-P: 3-0-1 **Practical: 30**
Credits: 4 **CA: 20**

Instructions for the Paper Setters: –
Eight questions of equal marks (10 marks each) are to be set, two in each of the four sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be divided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section.

UNIT – I

Internet: Introduction, its evolution, working, IP Address, DNS and its classification, working of DNS, Advantages, Disadvantages and Uses of Internet.
E–Mail: Introduction, its working, E-mail protocols: SMTP, POP, IMAP, Structure of E-mail.
HTTP: HTTP Protocol and its structure. **WWW:** Introduction and its working, **TCP/IP,** Browser Architecture. **FTP:** Introduction and its working**.**

UNIT – II

HTML: Introduction, Features, Advantages and Limitations, Program Structure, Headings, Paragraph, Styling, Formatting, Hyperlink, Image, Table, List, Frame, Entities, Form, Form elements.

UNIT-III

CSS: Introduction, Advantages and Limitations, types, selector, colors, background, box model, text, font, display, position, z-index, float, clear, rounded corners.

UNIT-IV

JavaScript: Basics, Features, Advantages, Limitations, Types, Basics, Functions, Control Statement, Arrays, JavaScript objects, Host objects.
DOM: Introduction, Methods, Accessing HTML and CSS, Events, Event Listener, Nodes and Collection.
BOM: Window, Screen, History, Navigation.

References / Textbooks:

1. Anshuman Sharma, Fundamentals of Internaet Applications, Lakhanpal Publications, 2016.
2. Ikvinderpal Singh, Internet Applications, Khanna Book Publishing Company, 1st Edition, 2011
3. P. Rizwan Ahmed, Internet & its Applications, Margham Publications, 2013.
4. Douglas E. Corner, Computer Networks and Internet with Internet Applications, Pearson, 4th Edition, 2008.
5. Satish Jain/Vineeta Pillai, Wireless Communication & Networking made Simple, BPB Publishers, 2007.
6. Laura Lerney, Rafe Colburn, Jennifer Kyrnin, Mastering HTML, CSS & Javascript Web Publishing, BPB Publishers, 1st Edition, 2016.

Note: The latest editions of the books should be followed.

Bachelor of Arts / Bachelor of Science(Economics) Semester V
Session 2025-26
COURSE CODE: BARM/ BECM-5124
COMPUTER APPLICATIONS (VOCATIONAL)
(INTERNET AND WEB DESIGNING
(PRACTICAL)

Examination Time: 3 Hrs. **Max. Marks: 100**
Theory: 50
L-T-P: 3-0-1 **Practical: 30**
Credits: 4 **CA: 20**

Practical on Internet and Web Designing.

BACHELOR OF ARTS /BACHELOR OF SCIENCE (ECONOMICS) Semester VI
Session 2025-26
PUNJABI (COMPULSORY)
COURSE CODE- BARL / BECL-6421

COURSE OUTCOMES

CO1: ‘ਕਾਵਿਗੌਰਵ’ਨੂੰ ਪੜ੍ਹਾਉਣ ਦਾਮਨੋਰਥਵਿਦਿਆਰਥੀਆਂਅੰਦਰਕਵਿਤਾਵਾਂਪ੍ਰਤੀਦਿਲਚਸਪੀ, ਸੂਝ ਨੂੰ ਪੈਦਾਕਰਨਾ ਹੈ।

CO2: ‘ਧਰਤੀਆਂ ਦੇ ਗੀਤ’(ਸਫ਼ਰਨਾਮਾ)ਨੂੰ ਸਿਲੇਬਸ ਵਿਚਸ਼ਾਮਿਲਕਰ ਕੇ ਵਿਦਿਆਰਥੀਆਂਅੰਦਰਸਫ਼ਰਨਾਮਾਪੜ੍ਹਣ ਦੀ ਰੁਚੀ ਨੂੰ ਪੈਦਾਕਰਨਾ ਹੈ ਅਤੇ ਇਸ ਸਾਹਿਤ ਰੂਪ ਨਾਲਨਾਲਜੋੜਣਾ ਹੈ।

CO3:ਲੇਖ ਰਚਨਾਕਰਨਨਾਲਵਿਦਿਆਰਥੀਆਪਣੀਗੱਲ ਨੂੰ ਕਹਿਣ ਦੀ ਜਾਚਸਿੱਖਣਗੇ ਅਤੇ ਇਹਦਿਮਾਗੀਕਸਰਤਵਿਚ ਸਹਾਈਹੋਵੇਗੀ। ਸਾਹਿਤ ਰੂਪਾਂ ਕਵਿਤਾ, ਕਹਾਣੀ, ਨਾਵਲ, ਨਾਟਕ, ਇਕਾਂਗੀਦੀ ਪਰਿਭਾਸ਼ਾ,ਪ੍ਰਕਾਰ ਤੇ ਤੱਤ ਨਾਲ ਜਾਣੂ ਕਰਵਾਇਆ ਜਾਵੇਗਾ।ਸਾਹਿਤ ਰੂਪਾਂ ਨੂੰ ਸਿਲੇਬਸ ਵਿੱਚ ਸ਼ਾਮਲ ਕਰਨ ਦਾ ਮਕਸਦ ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਇਨ੍ਹਾਂ ਸਾਹਿਤ ਰੂਪਾਂ ਦੀ ਪਰਿਭਾਸ਼ਾ,ਪ੍ਰਕਿਰਤੀ ਅਤੇ ਤੱਤਾਂ ਤੋਂ ਬਾਰੀਕੀ ਨਾਲ ਜਾਣੂ ਕਰਵਾਉਣਾ ਹੈ।

CO4:ਵਿਆਕਰਨਕ ਸ਼੍ਰੇਣੀਆਂ : ਲਿੰਗ, ਵਚਨ,ਕਾਰਕਕਿਰਿਆਵਾਕੰਸ਼ ਦੀ ਪਰਿਭਾਸ਼ਾ, ਬਣਤਰ ਤੇ ਪ੍ਰਕਾਰਨੂੰ ਪੜ੍ਹਾਉਣ ਦਾਮਨੋਰਥਵਿਦਿਆਰਥੀਆਂਅੰਦਰਭਾਸ਼ਾ ਦੀ ਅਮੀਰੀ ਅਤੇ ਬਾਰੀਕੀਆਂਨੂੰ ਸਮਝਣਲਈਵੱਖਰੇ -ਵੱਖਰੇ ਸਿਧਾਂਤਾਂਦਾਵਿਕਾਸ ਕਰਨਾ ਹੈ।

BACHELOR OF ARTS /BACHELOR OF SCIENCE (ECONOMICS) Semester VI
Session 2025-26
PUNJABI (COMPULSORY)
COURSE CODE- BARL / BECL-6421

ਸਮਾਂ : 3 ਘੰਟੇ **Maximum Marks: 100**
Theory: 80
CA: 20

ਅੰਕ ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

1. ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਚਾਰ (A-D) ਸੈਕਸ਼ਨ ਹੋਣਗੇ।ਸੈਕਸ਼ਨ A-D ਤੱਕ ਦੇ ਪ੍ਰਸ਼ਨ ਕ੍ਰਮਵਾਰ ਯੂਨਿਟ I-IV ਵਿਚੋਂ ਪੁੱਛੇ ਜਾਣਗੇ। ਹਰ ਯੂਨਿਟ ਵਿਚੋਂ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।
2. ਵਿਦਿਆਰਥੀ ਨੇ ਕੁੱਲ ਪੰਜ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਸੈਕਸ਼ਨ ਵਿਚੋਂ ਇਕ ਪ੍ਰਸ਼ਨ ਕਰਨਾ ਲਾਜ਼ਮੀ ਹੈ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਸੈਕਸ਼ਨ ਵਿਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।
3. ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ 16 ਅੰਕ ਹਨ।
4. ਪੇਪਰ ਸੈੱਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋਂ ਵੱਧ ਚਾਰ ਉਪ ਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕਰ ਸਕਦਾ ਹੈ।

ਪਾਠਕ੍ਰਮ ਅਤੇ ਪਾਠ ਪੁਸਤਕਾਂ

ਯੂਨਿਟ-I
ਕਾਵਿਗੌਰਵ(ਪਹਿਲੇ ਛੇ ਕਵੀ)(ਸੰਪਾ.ਬਿਕਰਮਸਿੰਘ ਘੁੰਮਣ, ਕਰਮਜੀਤਕੌਰ),ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ,
(ਸ਼ੇਖ ਫ਼ਰੀਦ, ਸ਼ਾਹ ਹੁਸੈਨ, ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਜੀ, ਗੁਰੂ ਅਰਜਨ ਦੇਵ ਜੀ,ਵਾਰਿਸ ਸ਼ਾਹ, ਸ਼ਾਹ ਮੁਹੰਮਦ)
(ਪ੍ਰਸੰਗ ਸਹਿਤ ਵਿਆਖਿਆ/ਵਿਸ਼ਾਵਸਤੂ/ਸਾਰ)

ਯੂਨਿਟ-II
ਧਰਤੀਆਂ ਦੇ ਗੀਤ(ਸਫ਼ਰਨਾਮਾ), ਬਰਜਿੰਦਰਸਿੰਘਹਮਦਰਦ,ਨਾਨਕਸਿੰਘ ਪੁਸਤਕਮਾਲਾ, ਅੰਮ੍ਰਿਤਸਰ
(ਸਮਾਜ ਸਭਿਆਚਾਰਪਰਿਪੇਖ/ਸਫਰਨਾਮੇ ਦੇ ਤੌਰ ਤੇ ਪਰਖ)

ਯੂਨਿਟ-III
(ੳ) ਲੇਖ ਰਚਨਾ(ਵਿਗਿਆਨ, ਤਕਨਾਲੋਜੀ ਅਤੇ ਚਲੰਤਮਸਲਿਆਂ ਸਬੰਧੀ)
(ਅ) ਆਧੁਨਿਕ ਸਾਹਿਤ ਰੂਪ : ਕਵਿਤਾ, ਕਹਾਣੀ, ਨਾਵਲ, ਨਾਟਕ, ਇਕਾਂਗੀ

ਯੂਨਿਟ-IV
ਵਿਆਕਰਣ :
(ੳ) ਵਿਆਕਰਨਕ ਸ਼੍ਰੇਣੀਆਂ : ਲਿੰਗ, ਵਚਨ,ਕਾਰਕ
(ਅ) ਕਿਰਿਆਵਾਕੰਸ਼ : ਪਰਿਭਾਸ਼ਾ, ਬਣਤਰ ਤੇ ਪ੍ਰਕਾਰ

Bachelor of Arts / Bachelor of Science (Economics) Semester VI
Session 2025-26
Basic Punjabi (In lieu of Punjabi Compulsory)
COURSE CODE- BARL / BECL-6031

COURSE OUTCOMES

CO1:ਵਿਦਿਆਰਥੀਪੰਜਾਬੀ ਸਭਿਆਚਾਰ ਦਾ ਪਿਛੋਕੜ,ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ ਦੀ ਭੂਗੋਲਿਕ ਸਥਿਤੀ,ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ ਦੇ ਨਿਖੜਵੇ ਲੱਛਣਦਾਅਧਿਐਨਕਰਨਗੇ।

CO2:ਪੰਜਾਬ ਦੇ ਮੇਲੇ,ਪੰਜਾਬ ਦੇ ਤਿਉਹਾਰ,ਪੰਜਾਬ ਦੇ ਪ੍ਰਮੁੱਖ ਧਾਰਮਿਕ ਸਥਾਨਬਾਰੇ ਜਾਣ ਸਕਣਗੇ।

CO3:ਜਨਮਨਾਲ ਸੰਬੰਧਿਤਰੀਤਾਂਰਸਮਾਂ,ਵਿਆਹਨਾਲ ਸੰਬੰਧਿਤਰੀਤਾਂਰਸਮਾਂ,ਮੌਤਨਾਲ ਸੰਬੰਧਿਤਰੀਤਾਂਰਸਮਾਂਬਾਰੇ ਜਾਣ ਸਕਣਗੇ।

CO4:ਪੰਜਾਬ ਦਾ ਖਾਣਪੀਣ,ਪੰਜਾਬ ਦਾ ਪਹਿਰਾਵਾ,ਪੰਜਾਬ ਦੇ ਲੋਕਵਿਸ਼ਵਾਸ ਦਾ ਅਧਿਐਨ ਕਰਨਗੇ।

Bachelor of Arts / Bachelor of Science (Economics) Semester VI
Session 2025-26
Basic Punjabi (In lieu of Punjabi Compulsory)
COURSE CODE- BARL/BECL-6031

ਸਮਾਂ : 3 ਘੰਟ **Maximum Marks :100**
Theory :80
CA :20

ਅੰਕਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕਲਈਹਦਾਇਤਾਂ

1. ਪ੍ਰਸ਼ਨਪੱਤਰ ਦੇ ਚਾਰ (A-D) ਸੈਕਸ਼ਨਹੋਣਗੇ।ਸੈਕਸ਼ਨA-D ਤੱਕ ਦੇ ਪ੍ਰਸ਼ਨਕ੍ਰਮਵਾਰ ਯੂਨਿਟI-IV ਵਿਚੋਂਪੁੱਛੇ ਜਾਣਗੇ। ਹਰ ਯੂਨਿਟਵਿਚੋਂ ਦੋ ਪ੍ਰਸ਼ਨਪੁੱਛੇ ਜਾਣਗੇ।
2. ਵਿਦਿਆਰਥੀ ਨੇ ਕੁੱਲ ਪੰਜਪ੍ਰਸ਼ਨਕਰਨੇ ਹਨ।ਹਰ ਸੈਕਸ਼ਨਵਿਚੋਂਇਕਪ੍ਰਸ਼ਨਕਰਨਾਲਾਜ਼ਮੀਹੈ।ਪੰਜਵਾਂਪ੍ਰਸ਼ਨਕਿਸੇ ਵੀ ਸੈਕਸ਼ਨਵਿਚੋਂਕੀਤਾਜਾ ਸਕਦਾਹੈ।
3. ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ 16ਅੰਕਹਨ।
4. ਪੇਪਰ ਸੈੱਟਕਰਨਵਾਲਾਜੇਕਰਚਾਹੇ ਤਾਂਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡਅੱਗੋਂਵੱਧਤੋਂਵੱਧਚਾਰਉਪ ਪ੍ਰਸ਼ਨਾਂਵਿਚਕਰ ਸਕਦਾਹੈ।

ਪਾਠਕ੍ਰਮ

ਯੂਨਿਟ-I

ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ ਦਾ ਪਿਛੋਕੜ
ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ ਦੀ ਭੂਗੋਲਿਕ ਸਥਿਤੀ
ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ ਦੇ ਨਿਖੱੜਵੇਂ ਲੱਛਣ

ਯੂਨਿਟ-II

ਪੰਜਾਬ ਦੇ ਮੇਲੇ
ਪੰਜਾਬ ਦੇ ਤਿਉਹਾਰ
ਪੰਜਾਬ ਦੇ ਪ੍ਰਮੁੱਖ ਧਾਰਮਿਕ ਸਥਾਨ

ਯੂਨਿਟ-III

ਜਨਮਨਾਲ ਸੰਬੰਧਿਤਰੀਤਾਂਰਸਮਾਂ
ਵਿਆਹਨਾਲ ਸੰਬੰਧਿਤਰੀਤਾਂਰਸਮਾਂ
ਮੌਤਨਾਲ ਸੰਬੰਧਿਤਰੀਤਾਂਰਸਮਾਂ

ਯੂਨਿਟ-IV

ਪੰਜਾਬ ਦਾ ਖਾਣਪੀਣ
ਪੰਜਾਬ ਦਾ ਪਹਿਰਾਵਾ
ਪੰਜਾਬ ਦੇ ਲੋਕ ਵਿਸ਼ਵਾਸ

Bachelor of Arts / Bachelor of Science (Economics) Semester VI
Session 2025-26
English (Compulsory)
Course Code: BARL/BECL-6212

Max. Marks: 100
Examination Time: 3 Hrs. **Theory: 80**
L-T-P (Credits): 4-0-0 **CA: 20**

Instructions for the Examiner:
Section A: Three questions from the novel *Train to Pakistan* from Unit I and three questions from *Glimpses of Theatre* from Unit II will be set. The students will be required to answer any five, each carrying 4 marks (100 words each). **(5×4=20)**
Section B: Four questions based on character, plot and theme(s) from the novel *Train to Pakistan* from Unit I will be set and students will be required to attempt any two, each carrying 10 marks (400 words each). **(2×10=20)**
Section C: Four questions based on the central idea, theme, tone or style etc. of the prescribed plays from the textbook, *Glimpses of Theatre* from Unit II will be set. The students will have to attempt any two, each carrying 10 marks (400 words each). **(2×10=20)**
Section D: Two questions with internal choice will be set from Unit III (Essay Writing) and Unit IV (Report Writing) each carrying ten marks. **(2×10=20)**

Unit I

Train to Pakistan by Khushwant Singh

Unit II

Glimpses of Theatre:

i) The Will
ii) Villa for Sale
iii) Progress
iv) The Monkey's Paw

Unit III

Essay Writing

Unit IV

Report Writing

Texts Prescribed:
1. *Train to Pakistan* by Khushwant Singh
2. *Glimpses of Theatre*, Guru Nanak Dev University Amritsar

Bachelor of Arts / Bachelor of Science (Economics) Semester –VI
Session 2025-26
Course Code: BARL/BECL-6175
Economics (Quantitative Methods for Economists)

Course outcomes:

After passing this course, students will be able to:

CO1: learn basic techniques of mathematics and their applications in economics

CO2: analyze data by using means of central tendency and dispersion.

CO3: understand the shapes of the curve and the relationship between variables by using techniques of skewness, kurtosis, and correlation and learn prediction and forecasting by using regression

CO4: calculate relative changes in the magnitude of related variables and also missing values within the data.

Bachelor of Arts / Bachelor of Science (Economics) Semester –VI
Session 2025-26
Course Code: BECL-6175
Economics (Quantitative Methods for Economists)

Time: 3 Hours **L-T-P (Credits):4-0-0**
Max. Marks: 100
Theory: 80
CA: 20

Note: Instructions for the Paper Setter:
Two questions, each carrying 16 marks, from each of the Units I-IV (i.e., a total of eight questions) are to be set. Candidates are required to attempt five questions, selecting at least one from each unit. The fifth question may be attempted from any unit.

UNIT–I

Sets, Relations, and Functions, Introduction to Matrices - definition, properties & inverse. Derivative of simple functions only (excluding log & exponential functions).Maxima/Minima for single variable functions.

UNIT–II

Measures of Central Tendency — Mean, Mode, Median, and Geometric Mean; Measures of Dispersion.

UNIT–III

Concepts and Measures of Skewness and Kurtosis: Boyle's & Karl Pearson's Measures. Simple
Correlation & Regression (ungrouped & grouped data).

UNIT–IV

Interpolation: Concepts and Methods — Binomial expansion, Newton and Lagrange's Method (with emphasis on missing values only). Price Index Numbers–Weighted and Unweighted Index Numbers,
various formulae and consistency tests.

Case Study – Real-Life Examples Based on Central Tendency and Dispersion

Suggested Readings

1. Gupta, S.P. (2014), *Statistical Methods*, Sultan Chand & Sons, New Delhi.
2. Gupta, S.C. (2018), *Fundamentals of Statistics*, Himalaya Publishing House, New Delhi
3. Elhance, D.N. and Elhance, V. (2018), *Fundamentals of Statistics*, Kitab Mahal, Allahabad
4. Croxton, F.E., Cowden, D.J., and Klein. S. (1973), *Applied General Statistics,* 3rd. Ed., Prentice
Hall of India, New Delhi.
5. Nagar, A.L. and Das, R.K. (1976), *Basic Statistics*, Oxford University Press, Bombay.
6. Aggarwal, C.S and Joshi, S.C.(2017) ,*Mathematics for Students of Economics*, New Academic
Publishing Co., Jalandhar

Note: The latest editions of the books are recommended.

Bachelor of Arts / Bachelor of Science (Economics) Semester–VI
Session 2025-26
Course Code: BARL/BECL-6453
Quantitative Techniques (Quantitative Techniques–VI)

Course outcomes:

After passing this course, students will be able to:

CO1: understand the nature and methodology of econometrics.

CO2: understand the OLS procedure of estimation of the model and tests of significance.

CO3: understand the nature and solutions of problems associated with the estimation of regression

CO4: understand the basics of dummy variables and estimation of models with lags.

Bachelor of Arts / Bachelor of Science (Economics) (Semester–VI)
Session 2025-26
Course Code: BARL/ BECL-6453
Quantitative Techniques (Quantitative Techniques–VI)

Time: 3 Hours **L-T-P (Credits):4-0-0**
Max. Marks: 100
Theory: 80
CA: 20

Note: Instructions for the Paper Setter:
Two questions, each carrying 16 marks, from each of the Units I-IV (i.e., a total of eight questions) are to be set. Candidates are required to attempt five questions, selecting at least one from each unit. The fifth question may be attempted from any unit.

Unit – I

Definition, Scope and Nature of Econometrics. Simple Linear Regression Model (OLS method) with applications

Unit – II

General Linear Regression Model: assumptions, properties (BLUE). Gauss-Markov Theorem (Two Variable and K-variable). Concepts of R^2 and Adjusted R^2, Test of Significance (Stress on Numericals)

Unit – III

Econometric Problems of Heteroscedasticity and Multicollinearity in the Regression Analysis: Sources, Consequences, Tests and Remedial Measures. Specification Bias.

Unit – IV

Problem of Auto-Correlation in the Regression Analysis: Sources, Consequences, Tests and Remedial Measures. Distributed Lag Models and Auto-Regressive Models (Introductory). Dummy Variable Technique and its uses.

Practical: Defining Variables and Entering Data, Estimation of Regression with statistical software

Suggested Readings:

1. Madnani GMK, (2015), *Introduction of Econometrics*, Oxford and IBH Publishing, N. Delhi.
2. Koutsoyiannis, A, *(2001), Theory of Econometrics,* The Macmillan Press Ltd., London.

Note: The latest editions of the books are recommended.

Bachelor of Arts/Bachelor of Science (Economics) Semester–VI
Session- 2025-26
Course Title: Mathematics (Linear Algebra)
Course Code: BARM/BECM-6333(I)

Course Outcomes:

After the completion of this course, students should be able to:
CO 1: Express the algebraic concepts such as binary operation, groups, rings and fields. Define a vector space and subspace of a vector space and check the linear dependence and linear independence of vectors.
CO 2: Describe the concepts of basis and dimension of vector spaces.
CO 3: Investigate properties of vector spaces and subspaces using linear transformation.
CO 4: Find the matrix representing a linear transformation.

Bachelor of Arts/Bachelor of Science (Economics) Semester–VI
Session- 2025-26
Course Title: Mathematics (Linear Algebra)
Course Code: BARM/BECM-6333(I)

Examination Time: 3 Hours — Max. Marks: 100
L T P — Theory: 80
4 0 0 — CA: 20

Instructions for the paper setters/examiners:
Eight questions of equal marks (16 marks each) are to be set, two in each of the four Sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any Section.

Unit I

Definition of groups, rings and fields with examples. Definition of a vector space, subspaces with examples. Direct sum of subspaces. Linear span, Linear dependence, Linear independence of vectors. Linear combination of vectors.

Unit II

Basis of a vector space, Finitely generated vector spaces. Existence theorem for basis. Invariance of the number of elements of the basis set. Dimension of sum of two subspaces. Quotient space and its dimension.

Unit III

Linear transformation. Algebra of linear transformation. Rank-Nullity theorem, Isomorphism and Isomorphic spaces.

Unit IV

Matrix of a linear transformation. Changes of basis, Linear operator.

References/Textbooks:

C.W.Curtis, Linear Algebra, Springer, New York, 2017
Reference Books:
1.S. Singh, Linear Algebra, Vikas Publishing, sixth edition, 1983.
2.V. Krishnamurthy, V. P. Mainra and J. L. Arora, An Introduction to Linear Algebra, East West Press, 1976.
3.S. Narayan and P.K. Mittal, A Text Book of Matrices, S. Chand & Co, tenth edition, 1972.

Bachelor of Arts/Bachelor of Science (Economics) Semester–VI
Session: 2025-26
Course Title: Mathematics (Numerical Analysis)
Course Code: BARM/BECM-6333(II)

After passing this course, the students will be able to:

CO 1. Know how to find the roots of transcendental and polynomial equations.

CO 2. Perform computation for solving a system of equations.

CO 3. Learn how to interpolate the given set of values.

CO 4. Learn numerical solution of differential equations & compute numerical integration and differentiation, numerical solution of ordinary differential equations.

Bachelor of Arts/Bachelor of Science (Economics) Semester–VI
Session: 2025-26
Course Title: Mathematics (Numerical Analysis)
Course Code: BARM/BECM-6333(II)

Examination Time: 3 Hours Max. Marks: 75
L T P Theory: 60
3 0 0 CA: 15

Instructions for the Paper Setter:
Eight questions of equal marks (12 marks each) are to be set, two in each of the four Sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any Section.
The students can use only Non Programmable& Non Storage Type Calculator.

Unit I

Error generation, propagation, error estimation and error bounds, Solution of non-linear equations, Bisection method, Iteration method, Newton's Method, Generalized Newton's Method, Method of false position, Muller's method, Rate of convergence of these methods.

Unit II

Solution of linear system of equation; Direct method, Gauss elimination variant (Gauss Jordan and Crout reduction), Triangular Method, Iterative Method, Jacobi's Method, Gauss Seidel Method. Finite Differences: Forward, Backward, Central, Divided differences, shift operator, relationship between the operators and detection of errors by use of difference operator. Interpolation with divided difference, Newton's formula, Lagrangian Method.

Unit III

Finite difference interpolation, Gauss formula, Stirling formula, Bessel's formula, Error Estimation Extrapolation. Numerical differentiation, Method based on interpolation. Numerical Integration, Trapezoidal rule, Simpson's rule, Weddle rule, Romberg Integration, Gaussian integration method, Gaussian legendre integration. Double numerical integration.

Unit IV

Numerical solution of ordinary differential equations, Initial value problem, Taylor's method, Euler's methods, Picard's method, Milne's Method, Runge-Kutta Method. Predictor- Corrector's Method.

References/Textbooks:
M K Jain, S R K Iyenger, R K Jain, Numerical Methods for Scientific and Engineering Computation, New Age International Private Limited, Seventh edition, 2019.

Bachelor of Arts / Bachelor of Science (Economics) - Semester–VI
(Session 2025-26)
COURSE CODE: BARM/ BECM-6134
Computer Science (Information Technology)

Course Outcomes:

After passing course the student will be able to:

CO1: Identify usage of various communication media and internet.

CO2: Acquaint with the usage of various information systems.

CO3: Comprehend digital marketing concepts and content.

CO4: Create and manage YouTube channel and blog.

Bachelor of Arts / Bachelor of Science (Economics) - Semester–VI
(Session 2025-26)
COURSE CODE: BARM/ BECM-6134
Computer Science (Information Technology)
(Theory)

Examination Time: 3 Hrs. **Max. Marks: 100**
Theory: 50
L-T-P: 3-0-1 **Practical: 30**
Credits: 4 **CA: 20**

Instructions for Paper Setter -
Eight questions of equal marks (10 marks each) are to be set, two in each of the four sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be divided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section. The students can use only Non–programmable & Non–storage type calculator

UNIT-I

Data and Network Communication: Communication media: Twisted pair, Coaxial, Fiber optics, Wireless (Line of Sight and Satellite), Network Advantages, Typesand Topologies, Communication using Network protocol/Network Interface card (NP/NIC), Transmission & Communication protocol/protocol (TCP/IP)

Internet: Internet basics**,** its uses and applications. System Development Process and System development Tools.

UNIT-II

Information Technology: Introduction to IT and its components, Information systems, Components of Computer based information systems. Types of Information systems- TPS, MIS, and DSS.

UNIT-III

Introduction to Digital Marketing: Digital Strategy and Planning, Website marketing tools, Digital content – website, blogs, email, webinars, videos, podcasts, e-zines, PPC advertising.
Social Media and Social Bookmarking: Facebook, Twitter, Pinterest, Instagram,
Search Engine Marketing: Meaning, Working and Search Engine Optimization,

UNIT-IV

YouTube Studio: Navigating studio, Uploading videos, Edit Video settings, Analytics, Copyright and Monetization.
Blog Writing: Blog Domain, choice of CMS, Register a domain or subdomain with a website
host.

References/Textbooks:

1. Peter Norton, Introduction to Computers, McGraw Hill (2017), 7th edition.
2. Patrick, G.Mckeown, Living with the Computers, Harcourt College Pub (1990) 3rd edition.

3. Hussain & Hussain, Computer: Technology, Applications & Social Implications, PHI Learning (2006)
4. Behrouz A. Forouzan, Data Communications & Networking, McGraw-Hill Education (2012), 5th edition.
5. Andrew S. Tanenbaum, Computer Network, Prentice Hall (2010), 5th edition.
6. Abraham Silberschatz, Greg Gagne, Peter B. Galvin, Operating System Concepts, Wiley Publishers (2018), 10th edition.
7. Yashavant Kanetkar, Unix Shell Programming, BPB Publications (2003), 1st edition.

Bachelor of Arts / Bachelor of Science (Economics) - Semester–VI
(Session 2025-26)
COURSE CODE: BARM/ BECM-6134
Computer Science (Information Technology)
(Practical)

Examination Time: 3 Hrs. **Max. Marks: 100**

Theory: 50

L-T-P: 3-0-1 **Practical: 30**

Credits: 4 **CA: 20**

Lab on Information Technology.

Bachelor of Arts / Bachelor of Science(Economics) Semester VI
(Session 2025-26)
COURSE CODE: BARM/ BECM-6124
Computer Applications (Vocational)
(Business Data Processing)

Course Outcomes:

After passing course the student will be able to:

CO1: Identify the impact of data and information on working of various organizations.

CO2: Comprehend different types of Data Processing Methods and File Processing techniques.

CO3: Create, edit, save, format and print spreadsheets.

CO4: Apply function and formulas in spreadsheets for data processing.

Bachelor of Arts / Bachelor of Science(Economics) Semester VI
(Session 2025-26)
COURSE CODE: BARM/ BECM-6124
Computer Applications (Vocational)
(Business Data Processing)
(Theory)

Examination Time: 3 Hrs. **Max. Marks: 100**
Theory: 50
L-T-P: 3-0-1 **Practical: 30**
Credits: 4 **CA: 20**

Instructions for the Paper Setters:–
Eight questions of equal marks (10 marks each) are to be set, two in each of the four sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be divided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section.

UNIT–I

Introduction to Data Processing, Need of Computers in Business.
Characteristics of Business Organization and Use of computers in various work areas of business like: Payroll System, Inventory Control, Online Reservation, Computer in Banks and Computer Application in Educational Institutions.

UNIT–II

Data Processing Methods: Batch Processing, Online Systems, Time Sharing, Real Time Systems and Distributed Processing.
File Organization: Types of Files (Master, Transaction, Work, Backup, Audit Files), File Organization (Serial, Sequential, Indexed Sequential, Direct Assess Files).

UNIT–III

Spreadsheets : Introduction, Worksheet, Data Entry, Editing, Cell Addressing Range, Copying and Moving Cell Content, Inserting and Deleting Rows and Column, Column Formats, Printing, Creating, displaying charts, Create, manage, and format pivot tables and pivot charts. Printing the Worksheet.

UNIT–IV

Working with functions - Date and time function, Statistical function, Mathematical and Trigonometric functions, Text function, Logical functions, other computations, using data analytics tools and what if analysis- data sort, fill, query, filter etc.

References / Textbooks:

1. Murdick& Ross, Introduction to Management Information Systems, Prentice Hall (1977).
2. Muneesh Kumar, Business Information Systems, Vikas Publishing (1998), 1st edition.
3. Silberschatz, Korth&Sudarshan, Database Systems Concepts, McGraw-Hill Inc.(2020), 7th edition.
4. Anshuman Sharma, Fundamentals of DBMS, Lakhanpal Publishers (2016), 4th edition.
5. Rachhpal Singh, Gurvinder Singh, Windows based computer courses, Kalyani Publishers (2011).
6. Peter Norton, Introduction to Computers, McGraw Hill Education (2017), 7th edition.

Bachelor of Arts / Bachelor of Science(Economics) Semester VI
(Session 2025-26)
COURSE CODE: BARM/ BECM-6124
COMPUTER APPLICATIONS (VOCATIONAL)
(BUSINESS DATA PROCESSING)
(PRACTICAL)

Examination Time: 3 Hrs. **Max. Marks: 100**

Theory: 50

L-T-P: 3-0-1 **Practical: 30**

Credits: 4 **CA: 20**

Practical on business data processing.