Faculty of Vocational Studies

SYLLABUS FOR

Bachelor of Vocation

(Artificial Intelligence and Data Science)

(Semester I-II)

(Under Credit Based Continuous Evaluation Grading System)

Session: 2020-21

The Heritage Institution

KANYA MAHA VIDYALAYA JALANDHAR

(Autonomous)

PROGRAMME SPECIFIC OUTCOMES

On successful completion of B.Voc. Programme (Artificial Intelligence and Data Science) students will be able to:

PO 01: Get knowledge about various practical and professional tools required for data entry.

PS 02: Get knowledge about document writing and technical writing concepts

PS 03: Professional development in the field of AI and Data Science

PS 04: Get knowledge about basic and advanced data science tools (e.g, Python, R and Weka) while working collaboratively on real-world problems.

PS 05: Get knowledge about methods to collect, organize, manage, examine, prepare, analyze, cleaning, transformation, modeling and visualize data on student-driven data analysis projects.

Scheme and Curriculum of Examinations of Three Year Degree Programme
Bachelor of Vocation
(Artificial Intelligence and Data Science) Semester I
Session 2020-2021

Bachelor of Vocation (Artificial Intelligence and Data Science) Semester I									
Course code	Course Title	Course Type	L-T-P	Total	Marks				mination time (in Hours)
					Total	Ext.		CA	
						L	P		
BVIL-1421/ BVIL-1031/ BVIL-1431	Punjabi(Compulsory)/ [1]Basic Punjabi/ [2]Punjab History and Culture	C	2-0-0	2	50	40	-	10	3
BVIL-1102	Communication Skills in English	C	4-0-0	4	50	40	-	10	3
BVIL-1113	Introduction to Computers and Information Technology	C	2-0-0	2	50	40	-	10	3
BVIL-1114	Introduction to Artificial Intelligence and Data Science	S	4-0-0	4	75	60	-	15	3
BVIL-1115	Office Fundamentals	S	0-2-0	2	75	60		15	3
BVIP-1116	Lab in Office Fundamentals	S	0-0-4	4	50		40	10	3
BVIP-1117	Field Visit and Report	S	0-0-4	4	75	-	60	15	3
BVIP-1118	Minor Project -1	S	0-2-2	4	75	-	60	15	3
AECD-1161	[*]Drug Abuse: Problem, Management and Prevention (Compulsory)	AC	2-0-0	2	50	40	-	10	3
SECF-I492	[*]Foundation Course	AC	2-0-0	2	25	20	-	5	1
	Total			**30**	**500**				

Note: C – Compulsory, S – Skill Enhancement, AC-Audit Course

1. Special paper on lieu of Punjabi(Compulsory)
2. Special paper in lieu of Punjabi(Compulsory) for those students who are not domicile of Punjab
   *Grade points or grades of these courses will not be included in SGPA/CGPA of the Semester/ Programme

Scheme and Curriculum of Examinations of Three Year Degree Programme
Bachelor of Vocation
(Artificial Intelligence and Data Science) Semester II
Session 2020-2021

Bachelor of Vocation (Artificial Intelligence and Data Science) Semester II									
Course code	Course Title	Course Type	Credits L-T-P	Total	Marks				Examination time (in Hours)
					Total	Ext.		CA	
						L	P		
BVIL-2421/ BVIL-2031/ BVIL-2431	Punjabi(Compulsory)/ [1]Basic Punjabi/ [2]Punjab History and Culture	C	2-0-0	2	50	40	-	10	3
BVIM-2102	Communication Skills in English	C	3-0-1	4	50	25	15	10	3+3
BVIL-2113	Computational Problem Solving	S	3-0-0	3	75	60	-	15	3
BVIL-2114	Mathematical Foundation	C	2-0-0	2	50	40	-	10	3
BVIL-2115	Technical Writing	S	3-0-0	3	50	40	-	10	3
BVIL-2116	Data Collection and Analysis	S	4-0-0	4	75	60	-	15	3
BVIL-2117	Database Management System	S	4-0-0	4	75	60		15	3
BVIP-2118	Computational Problem Solving Lab	S	0-0-2	2	50		40	10	3
BVID-2119	Minor Project-II	S	0-0-2	2	50		40	10	3
AECD-2161	[*] Drug Abuse: Problem, Management and Prevention (Compulsory)	C	2-0-0	2	50	40	-	10	3
SECM-2502	[*]Moral Education	C	2-0-0	2	25	20	-	5	3
	Total			30	525				

Note: C – Compulsory, S – Skill Enhancement

1. Special paper on lieu of Punjabi(Compulsory)
2. Special paper in lieu of Punjabi(Compulsory) for those students who are not domicile of Punjab
   *Grade points or grades of these courses will not be included in SGPA/CGPA of the Semester/ Programme

B.Voc. (Artificial Intelligence and Data Science) - Semester I
COURSE CODE: BVIL-1421
Punjabi (Compulsory)

COURSE OUTCOMES:

CO1: ਆਤਮ ਅਨਾਤਮ' ਪੁਸਤਕ ਦੇ ਕਵਿਤਾ ਭਾਗ ਨੂੰ ਪੜ੍ਹਾਉਣ ਦਾ ਮਨੋਰਥ ਵਿਦਿਆਰਥੀਆਂ ਅੰਦਰ ਕਵਿਤਾ ਪ੍ਰਤੀ ਦਿਲਚਸਪੀ, ਸੂਝ ਨੂੰ ਪੈਦਾ ਕਰਨਾ ਹੈ ਤਾਂ ਕਿ ਉਹ ਆਧੁਨਿਕ ਦੌਰ ਵਿਚ ਚੱਲਰਹੀਆਂ ਕਾਵਿ ਧਾਰਾਵਾਂ ਅਤੇ ਕਵੀਆਂ ਬਾਰੇ ਗਿਆਨ ਹਾਸਿਲ ਕਰ ਸਕਣ।ਇਸ ਦਾ ਹੋਰ ਮਨੋਰਥ ਕਵਿਤਾ ਦੀ ਵਿਆਖਿਆ, ਵਿਸ਼ਲੇਸ਼ਣ ਤੇ ਮੁਲੰਕਣ ਦੀ ਪ੍ਰਕਿਰਿਆ ਤੋਂਜਾਣੂ ਕਰਾਉਣਾ ਵੀ ਹੈ ਤਾਂਕਿ ਉਹ ਸਮਕਾਲੀ ਸਮਾਜਦੀਆਂ ਸਮੱਸਿਆਵਾਂ ਨੂੰ ਸਮਝ ਸਕਣ ਅਤੇ ਆਲੋਚਨਾਤਮਕ ਦ੍ਰਿਸ਼ਟੀ ਬਣਾ ਸਕਣ।

CO2:ਗਿਆਨ ਮਾਲਾ (ਵਿਗਿਆਨਕ ਤੇ ਸਮਾਜ ਵਿਗਿਆਨਕ ਲੇਖਾਂ ਦਾ ਸੰਗ੍ਰਿਹ) ਪੁਸਤਕ ਨੂੰ ਸਿਲੇਬਸ ਵਿਚ ਸ਼ਾਮਿਲ ਕਰ ਕੇ ਵਿਦਿਆਰਥੀਆਂ ਅੰਦਰ ਪੜ੍ਹਨ ਦੀ ਰੁਚੀ ਨੂੰ ਪੈਦਾ ਕਰਨਾ ਹੈ ਅਤੇ ਮੁੱਲਵਾਨ ਗਿਆਨ ਦੇਣਾ ਹੈ।

CO3:ਪੈਰ੍ਹਾ ਰਚਨਾ ਅਤੇ ਪੈਰ੍ਹਾਪੜ੍ਹ ਕੇ ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਉਤਰ ਦੇਣ ਦਾ ਮਨੋਰਥ ਵਿਦਿਆਰਥੀਆਂ ਦੀ ਬੁੱਧੀ ਨੂੰ ਤੀਖਣ ਕਰਦਿਆਂ ਉਨਾਂ ਦੀ ਲਿਖਣ ਪ੍ਰਤਿਭਾ ਨੂੰ ਉਜਾਗਰ ਕਰਨਾ ਹੈ।

CO4:ਧੁਨੀ ਵਿਉਂਤ ਪੜ੍ਹਨ ਨਾਲ ਵਿਦਿਆਰਥੀ ਧੁਨੀਆਂ ਦੀ ਉਚਾਰਨ ਪ੍ਰਣਾਲੀ ਤੋਂਵਾਕਫ ਹੋਣਗੇ।

B.Voc. (Artificial Intelligence and Data Science) Semester I
COURSE CODE: BVIL-1421

Punjabi (Compulsory)

ਪਾਠ ਕ੍ਰਮ ਅਤੇ ਪਾਠ ਪੁਸਤਕਾਂ

L - T – P	Max. Marks: 50
2-0-0	Theory: 40
Time : 3 Hours	CA: 10

ਯੂਨਿਟ-I

ਆਤਮ ਅਨਾਤਮ (ਕਵਿਤਾਭਾਗ),(ਸੰਪ. ਸੁਹਿੰਦਰ ਬੀਰ ਅਤੇ ਵਰਿਆਮਸਿੰਘ ਸੰਧੂ) ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ।

ਪ੍ਰੋ.ਪੂਰਨ ਸਿੰਘ, ਪ੍ਰੋ.ਮੋਹਨ ਸਿੰਘ,ਅੰਮ੍ਰਿਤਾ ਪ੍ਰੀਤਮ, ਜਗਤਾਰ, ਸੁਰਜੀਤ ਪਾਤਰ(ਕਵੀ ਪਾਠ ਕ੍ਰਮ ਦਾ ਹਿੱਸਾ ਹਨ ਸਾਰ, ਵਿਸ਼ਾ ਵਸਤੂ**)**
        08 ਅੰਕ

ਯੂਨਿਟ-II

ਗਿਆਨ ਮਾਲਾ (ਵਿਗਿਆਨਕ ਤੇ ਸਮਾਜ ਵਿਗਿਆਨਕ ਲੇਖਾਂ ਦਾ ਸੰਗ੍ਰਹਿ),(ਸੰਪਾ.ਡਾ. ਸਤਿੰਦਰ ਸਿੰਘ, ਪ੍ਰੋ. ਮਹਿੰਦਰ ਸਿੰਘ ਬਨਵੈਤ), ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ।

ਲੇਖ : ਭਰੂਣ ਹੱਤਿਆ ਦੇ ਦੇਸ਼ ਵਿਚ, ਵਾਤਾਵਰਣੀ ਪ੍ਰਦੂਸ਼ਣ ਅਤੇ ਮਨੁੱਖ, ਏਡਜ਼ : ਇਕ ਗੰਭੀਰ ਸੰਕਟ।
(ਸਾਰ, ਵਿਸ਼ਾਵਸਤੂ**)**   08 ਅੰਕ

ਯੂਨਿਟ-III

(ੳ) ਪੈਰ੍ਹਾਰਚਨਾ

(ਅ) ਪੈਰ੍ਹਾ ਪੜ੍ਹ ਕੇ ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਉਤਰ।   08 ਅੰਕ

ਯੂਨਿਟ-IV

(ੳ) ਪੰਜਾਬੀ ਧੁਨੀ ਵਿਉਂਤ : ਪਰਿਭਾਸ਼ਾ, ਉਚਾਰਨ ਅੰਗ

(ਅ)ਸਵਰ, ਵਿਅੰਜਨ   08 ਅੰਕ

ਅੰਕ ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

1.   ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਚਾਰ ਸੈਕਸ਼ਨ ਹੋਣਗੇ।ਸੈਕਸ਼ਨ A-D ਤੱਕ ਦੇ ਪ੍ਰਸ਼ਨ ਯੂਨਿਟI-IV ਵਿਚੋਂ ਪੁੱਛੇ ਜਾਣਗੇ। ਹਰ ਸੈਕਸ਼ਨ ਵਿਚ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।

2.   ਵਿਦਿਆਰਥੀ ਨੇ ਕੁੱਲ ਪੰਜ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਸੈਕਸ਼ਨ ਵਿਚੋਂ 'ਇਕ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਸੈਕਸ਼ਨ ਵਿਚੋਂ 'ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।

3.   ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ 08 ਅੰਕਹਨ।

4.   ਪੇਪਰ ਸੈੱਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋਂ ਵੱਧ ਚਾਰ ਉਪ ਪ੍ਰਸ਼ਨਾਂ ਵਿਚਕਰ ਸਕਦਾ ਹੈ।

B.Voc. (Artificial Intelligence and Data Science) Semester I
COURSE CODE: BVIL-1031
BASIC PUNJABI (In lieu of Compulsory Punjabi)

COURSE OUTCOMES:

CO1: ਮੁੱਢਲੀ ਪੰਜਾਬੀ ਪੜ੍ਹਾਉਣ ਦਾ ਮਨੋਰਥ ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਨੂੰ ਸਿਖਾਉਣ ਦੀ ਪ੍ਰਕਿਰਿਆ ਵਿਚ ਪਾ ਕੇ ਇਕ ਹੋਰ ਭਾਸ਼ਾ ਸਿੱਖਣ ਦਾ ਮੌਕਾ ਪ੍ਰਦਾਨ ਕਰਨਾ ਹੈ।

CO2: ਇਸ ਵਿਚ ਵਿਦਿਆਰਥੀ ਨੂੰ ਬਾਰੀਕੀ ਨਾਲ ਭਾਸ਼ਾ ਦਾ ਅਧਿਐਨ ਕਰਵਾਇਆ ਜਾਵੇਗਾ।

CO3: ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਪੰਜਾਬੀ ਸ਼ਬਦ ਰਚਨਾ ਤੋ ਜਾਣੂ ਕਰਵਾਇਆ ਜਾਵੇਗਾ।

CO4: ਮੁੱਢਲੀ ਪੰਜਾਬੀ ਪੜ੍ਹਾਉਣ ਦਾ ਮਨੋਰਥ ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਨਿੱਤ ਵਰਤੋਂ ਦੀ ਪੰਜਾਬੀ ਸ਼ਬਦਾਵਲੀ ਬਾਰੇ ਦੱਸਣਾ ਹੈ।

CO5: ਮੁੱਢਲੀ ਪੰਜਾਬੀ ਪੜ੍ਹਾਉਣ ਦਾ ਮਨੋਰਥ ਵਿਦਿਆਰਥੀਆਂ ਦਾ ਸ਼ਬਦ ਘੇਰਾ ਵਿਸ਼ਾਲ ਕਰਨਾ ਹੈ।

CO6: ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਪੰਜਾਬੀ ਵਿਚ ਹਫ਼ਤੇ ਦੇ ਸੱਤ ਦਿਨਾਂ ਦੇ ਨਾਂ, ਬਾਰ੍ਹਾਂ ਮਹੀਨਿਆਂ ਦੇ ਨਾਂ, ਰੁੱਤਾਂ ਦੇ ਨਾਂ, ਇਕਤੋਂ ਸੌ ਤੱਕ ਗਿਣਤੀ ਸ਼ਬਦਾਂ ਵਿਚ ਸਿਖਾਉਣਾ ਹੈ।

B.Voc. (Artificial Intelligence and Data Science) Semester I
COURSE CODE: BVIL-1031

BASIC PUNJABI

L - T – P	Max. Marks: 50
2-0-0	Theory: 40
Time : 3 Hours	CA: 10

ਪਾਠ ਕ੍ਰਮ

ਯੂਨਿਟ-I

ਪੈਂਤੀ ਅੱਖਰੀ, ਅੱਖਰ ਕ੍ਰਮ, ਪੈਰ ਬਿੰਦੀ ਵਾਲੇ ਵਰਣ ਅਤੇ ਪੈਰ ਵਿਚ ਪੈਣ ਵਾਲੇ ਵਰਣ ਅਤੇ ਮਾਤਰਾਵਾਂ (ਮੁੱਢਲੀ ਜਾਣ ਪਛਾਣ) ਲਗਾਖ਼ਰ (ਬਿੰਦੀ, ਟਿੱਪੀ, ਅੱਧਕ) : ਪਛਾਣ ਅਤੇ ਵਰਤੋਂ ।

ਯੂਨਿਟ-II

ਭੰਜਾਬੀ ਸ਼ਬਦ ਬਣਤਰ : ਮੁੱਢਲੀ ਜਾਣ ਪਛਾਣ (ਸਾਧਾਰਨ ਸ਼ਬਦ, ਸੰਯੁਕਤ ਸ਼ਬਦ, ਮਿਸ਼ਰਤ ਸ਼ਬਦ, ਮੂਲ ਸ਼ਬਦ, ਅਗੇਤਰ ਅਤੇ ਪਿਛੇਤਰ)

ਯੂਨਿਟ-III

ਨਿੱਤ ਵਰਤੋਂ ਦੀ ਪੰਜਾਬੀ ਸ਼ਬਦਾਵਲੀ : ਬਾਜ਼ਾਰ, ਵਪਾਰ, ਰਿਸ਼ਤੇਨਾਤੇ, ਖੇਤੀ ਅਤੇ ਹੋਰ ਧੰਦਿਆਂ ਆਦਿ ਨਾਲ ਸੰਬੰਧਤ।

ਯੂਨਿਟ-IV

ਹਫ਼ਤੇ ਦੇ ਸੱਤ ਦਿਨਾਂ ਦੇ ਨਾਂ, ਬਾਰ੍ਹਾਂ ਮਹੀਨਿਆਂ ਦੇ ਨਾਂ, ਰੁੱਤਾਂ ਦੇ ਨਾਂ, ਇੱਕਤੋਂ ਸੌ ਤੱਕ ਗਿਣਤੀ ਸ਼ਬਦਾਂ ਵਿਚ ।

ਅੰਕ ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

1. ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਚਾਰ ਸੈਕਸ਼ਨ ਹੋਣਗੇ।ਸੈਕਸ਼ਨ A-D ਤੱਕ ਦੇ ਪ੍ਰਸ਼ਨ ਯੂਨਿਟI-IV ਵਿਚੋਂ ਪੁੱਛੇ ਜਾਣਗੇ। ਹਰ ਸੈਕਸ਼ਨ ਵਿਚ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।

2. ਵਿਦਿਆਰਥੀ ਨੇ ਕੁੱਲ ਪੰਜ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਸੈਕਸ਼ਨ ਵਿਚੋਂ 'ਇਕ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਸੈਕਸ਼ਨ ਵਿਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।

3. ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ 08 ਅੰਕ ਹਨ।

4. ਪੇਪਰ ਸੈੱਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋਂ ਵੱਧ ਚਾਰ ਉਪ ਪ੍ਰਸ਼ਨਾਂ ਵਿਚਕਰ ਸਕਦਾ ਹੈ।

B.Voc. (Artificial Intelligence and Data Science) Semester I
Course Code: BVIL-1431

Punjab History and Culture (1450-1716) (Special paper in lieu of Punjabi Compulsory)

COURSE OUTCOMES:

After the completion of Sem-I (Under Credit Based Continuous Evaluation Grading System) student will have a grasp on:

CO1: To enable them to have grasp on the physical features of Punjab, its flora & fauna, the composition of population, culture, society, religion and polity.

CO2: To make a comparison between the original philosophical & teachings of Sikh Gurus and their relevance in the present scenario.

CO3: To enable students of history to have deep insight into the origin of Sikhism, foundation of Khalsa, the conflict with Mughals and the rise of Banda Bahadur and the aftermath.

CO4: The paper has been designed specifically to have in dept peep into the past in order to have better understanding of present & apply corrective measures

B.Voc. (Artificial Intelligence and Data Science) Semester I
Course Code: BVIL-1431

Punjab History and Culture (1450-1716)
(Special paper in lieu of Punjabi
Compulsory)

L - T – P	Max. Marks: 50
2-0-0	Theory: 40
Time : 3 Hours	CA: 10

Instructions for the Paper Setter:

Question paper shall consist of four Sections. Candidates shall attempt 5 questions in all, by at least selecting one Question from each unit and the 5th question may be attempted from any of the four sections. Each question carries 8 marks.

Section- A

1. Land and the People.
2. Bhakti Movement

Section- B

3. Life and Teaching of Guru Nanak Dev.
4. Contribution of Guru Angad Dev, Guru Arjun Dev, Guru Amar Das and Guru Ram Das.

Section –C

5. Guru Hargobind.
6. Martyrdom of Guru Teg Bahadur

Section- D

1. Guru Gobind Singh and the Khalsa.
2. Banda Singh Bahadur: Conquests and Execution.

References/ Textbooks
1. Kirpal Singh(ed.), *History and Culture of the Punjab, Part-ii, Punjabi University,* Patiala. 1990.
2. Fauja Singh (ed.), *History of Punjab, Vol, III Punjabi University, Patiala, 1987.*
3. J.S. Grewal, *The Sikhs of the Punjab, Cup, Cambridge, 1991.*
4. Khushwant Singh, *A History of the Sikhs,* Vol. I, OUP, New Delhi, 1990

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B.Voc. (Artificial Intelligence and Data Science) Semester I

Course Code: BVIL-1102

Communication Skills in English

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COURSE OUTCOMES

At the end of this course, the students will develop the following Skills:

CO 1: Reading skills that will facilitate them to become an efficient reader

CO 2: The ability to realize not only language productivity but also the pleasure of being able to articulate well

CO 3: The power to analyze, interpret and infer the ideas in the text

CO 4: The ability to have a comprehensive understanding of the ideas in the text and enhance their critical thinking

CO 5: Writing skills of students which will make them proficient enough to express ideas in clear and grammatically correct English

CO 6: Ability to plan, organise and present ideas coherently on a given topic

CO 7: The skill to use an appropriate style and format in writing letters (formal and informal)

B.Voc. (Artificial Intelligence and Data Science) Semester I

Course Code: BVIL-1102

Communication Skills in English

L - T – P	Max. Marks: 50
4-0-0	Theory: 40
Time : 3 Hours	CA: 10

Instructions for the paper setter and distribution of marks:

The question paper will consist of four sections and distribution of marks will be as under:

Section-A: Two questions of theoretical nature will be set from Unit I of the syllabus and the candidates will have to attempt one carrying 8 marks.

Section-B: Two comprehension passages will be given to the students based on the Unit II and the candidates will have to attempt one carrying 8 marks.

Section-C: Two questions will be given based on the topics given in the Unit III and the candidates will have to attempt one carrying 8 marks.

Section-D: One out of the two questions will have to be attempted by the candidates based on the topics given in Unit IV of the syllabus. It will carry 8 marks.

Important Note:

The candidate will have to attempt five questions in all selecting one from each section of the question paper and the fifth question may be attempted from any of the four sections.

(8 x 5 = 40)

The syllabus is divided in four units as mentioned below:

Unit I

Reading Skills: Reading Tactics and strategies; Reading purposes–kinds of purposes and associated comprehension; Reading for direct meanings.

Unit II

Reading for understanding concepts, details, coherence, logical progression and meanings of phrases / expressions.

Activities:
- Comprehension questions in multiple choice format
- Short comprehension questions based on content and development of ideasUnit III

Writing Skills: Guidelines for effective writing; writing styles for application, personal letter, official/ business letter.

Activities

- Formatting personal and business letters.
- Organising the details in a sequential order

Unit IV

Resume,memo, notices etc.; outline and revision.

Activities:

- Converting a biographical note into a sequenced resume or vice-versa
- Ordering and sub-dividing the contents while making notes.
- Writing notices for circulation/ boards

References:

1. *Oxford Guide to Effective Writing and Speaking* by John Seely.
2. *Business Communication,* by Sinha, K.K. Galgotia Publishers, 2003.
3. *Business Communication* by Sethi, A and Adhikari, B., McGraw Hill Education 2009.
4. *Communication Skills* by Raman, M. & S. Sharma, OUP, New Delhi, India (2011).
5. *English Grammar in Use: A Self Study Reference and Practice Book Intermediate Learners Book* by Raymond Murphy, Cambridge University Press

Bachelor of Vocation (Artificial Intelligence and Data Science) - Semester I

Course Code: BVIL-1113

Introduction to Computers and Information Technology

COURSE OUTCOMES:

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

CO1: Comprehend fundamentals of Computer and Software

CO2: Describe Information Technology and its Applications

CO3: Comprehend the concepts of I/O devices and memory.

CO4: Demonstrate the Introduction to Emerging Technologies: Big Data, IoT and Cloud

Bachelor of Vocation (Artificial Intelligence and Data Science) - Semester I

Course Code: BVIL-1113

Introduction to Computers and Information Technology

L - T – P	Max. Marks: 50
2-0-0	Theory: 40
Time : 3 Hours	CA: 10

Instructions for Paper Setter -

Eight questions of equal marks are to 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 Information Technology: Basic concepts of IT, Data Processing: Data and Information.

Introduction to Computers and its Applications:

- Computer as a system, basic concepts, functional units and their inter relation.
- Milestones in Hardware and Software.
- Batch oriented / on–line / real time applications.
- Application of computers.

Unit-II

Software: System and Application Software, Utility packages, Configuration of Computer System.
Applications of Information Technology: Wide range of Applications in: Home, Education and Training, Entertainment, Science, medicine, engineering etc

Unit-III

Input Devices: Keyboard, mouse, pens, touch screens, Bar Code reader, joystick, source data automation, (MICR, OMR, OCR), screen assisted data entry: portable / handheld terminals for data collection, vision input systems.

Output Devices: Monitor, Serial line page printers, plotters, voice response units.

Data Storage Devices and Media: Primary storage (Storage addresses and capacity, type of memory), Secondary storage, Magnetic storage devices and Optical Storage Devices.

Unit-IV

Introduction to Emerging Technologies: Big Data: Characteristics, Architecture, Technologies and Applications,

Cloud: Predecessors technologies, characteristics, service models, Deployment models, benefits and challenges.

IoT: History, characteristics, applications and Adoption barriers.

References/ Textbooks:

1. P.K.Sinha, "Computer Fundamentals", Sixth Edition, BPB Publications, 2004.
2. N. Subramanian, "Introduction to Computers", First Edition, McGraw Hill Education India, 2001.
3. Peter Norton, "Introduction to Computers", First Edition, McgrawHill Education, 2017.
4. Gurvinder Singh, Rachpal Singh,"Windows Based Computer Courses", Third Edition, Kalyani Publishers, 2017

Bachelor of Vocation (Artificial Intelligence and Data Science) - Semester I

Course Code: BVIL-1114

Introduction to Artificial Intelligence and Data Science

COURSE OUTCOMES:

After completing this course the student will be able to:

CO1: Comprehend the concepts of Artificial Intelligence.

CO2: Demonstrate various concepts of Data Science domain and its difference with business intelligence.

CO3: Comprehend Data Science methodologies and steps involved in data analysis.

CO4: Apply learned techniques to solve problem associated with basic statistical operations on Real/Dummy data

Bachelor of Vocation (Artificial Intelligence and Data Science) - Semester I

Course Code: BVIL-1114

Introduction to Artificial Intelligence and Data Science

L - T – P	Max. Marks: 75
4-0-0	Theory: 60
Time : 3 Hours	CA: 15

UNIT I

What is AI, How does it works, History of AI, AI- Intelligent Systems, benefits and Risk of   AI, Challenges, Opportunities and Applications.AI its applications in data science, Problem Framing

UNIT II

Introduction to Data Science, Evolution of Data science, Need of Data Science, Components of Data Science, Data Science process.

Difference between data science and business intelligence. Application Areas and Challenges in Data Science, Job Roles in Data Science domain

UNIT III

Data Science Methodologies, Steps Involved in Data Analysis (data collection, integration, management, modeling, analysis, visualization, prediction and informed decision making)

UNIT IV

Statistical description of data: Mean, Median and Mode.

Measures of Dispersion: Range, Quartile Deviation, Mean Deviation, Standard Deviation

References/ Textbooks:

1. J. Han, M. Kamber and J. Pei , "Data Mining: Concepts and Techniques", Third Edition, Morgan Kaufmann Publishers, 2011.
2. Nong Ye, "Handbook of Data Mining", First Edition, 2003.
3. Anshuman Sharma, "Fundamentals of Numerical Methods and Statistical Techniques", Second Edition, Lakhanpal Publishers, 2014.

Bachelor of Vocation (Artificial Intelligence and Data Science) - Semester I

Course Code: BVIL-1115

Office Fundamentals

COURSE OUTCOMES:

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

CO1: Comprehend basics and formatting concepts of word document.

CO2: Have knowledge of creating, customize Tables and working with Graphics in word.

CO3: Comprehend basics of presentation involved in text formatting, graphs and animation.

CO4: Comprehend basics of spreadsheet involved in creation, editing of graphs, sorting, querying and filtering of data.

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Bachelor of Vocation (Artificial Intelligence and Data Science) - Semester I

Course Code: BVIL-1115

Office Fundamentals

L - T – P	Max. Marks: 75
0-2-0	Theory: 60
Time : 3 Hours	CA: 15

Instructions for the Paper Setter

Eight questions of equal marks (8 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

Basics of Word Document: Creating a New Document, Inserting and Deleting Text, Saving a Document, Opening a Document, Selecting and Replacing Text Using Undo, Redo and Repeat Navigating through a Document, Viewing a Document, Working with the Document, Window Viewing Multiple Document, and Windows Previewing and Printing a Document, Closing a Document

Formatting of a Word Document: Drop Caps, Add Shading to Draw Reader's Attention, Steps to Add Borders to a Document, work with Word Styles, Adjust the Horizontal Size of Characters, Insert and Prevent certain types of Page Breaks, Using the Word, Themes To Make a Professional Document look. Steps to Create, Modify or Attach a Template. Add, Edit or Delete Headers and Footers, Toolbars of word

Unit II

Creating and Customizing Tables: Methods to Create a Table, Steps to Create a Table that has Specific Column Widths. Deleting Column, Row or Entire Table in Word, Creating Table of Contents in word

Working with Graphics: Add, Crop, Change Pictures File Size and Wrap Picture with Text, Discover the Proper Steps to Add and Organize Clip Arts, Manipulating WordArt Effects to the Text

Unit III

Presentation: Introduction to PowerPoint, Exploring menus, starting a new slide, saving presentation, moving/rearranging slides, printing slides. Applying theme to presentation, Views (slide View, slide sorter, notes view, outline view), Formatting & enhancing text formatting. Creating a graph, displaying slide show, adding multimedia. Slide transitions, applying Animation, Timing slide display, adding movies & sounds. Using a pick look Wizards to change format.

Unit IV

Spreadsheet: Introduction to Worksheet/Spreads, Features of excel, Describe the excel Window, Creating a new workbook, different functions on different data in excel, creation of graphs, editing

it and formatting, changing chart type to 2d chart or 3d chart, pivot table, creation of worksheet, adding, deleting, moving the text in worksheet, linking different sheets, sorting the data, querying the data, filtering the data (auto and advance filters), What-if analysis, To open an already existing workbook, Saving workbook, printing a worksheet, Closing the workbook & exiting.

References/ Textbooks:

1. Joyce Cox, Joan Lambert and Curtis Frye, "Microsoft office Professional 2010 Step by Step", First Edition, Microsoft Press, 2010.

2. Bucki Lisa A, "Office 2016 Bible", First Edition, Wiley, 2013.

3. WeverkaPeter, "Office 2016 All in One for Dummies", First Edition, Wiley India, 2015.

4. Satish Jain, Kratika, M.Geetha, "MS–Office 2010", First Edition, BPB Publications, 2012.

Lab in Office Fundamentals

L - T – P	Max. Marks: 50
0-0-4	Practical: 40
Time : 3 Hours	CA: 10

Lab based on office tools

B.Voc (Artificial Intelligence and Data Science) Semester- I

Course Code: BVIP-1117

Field Visit and Report

COURSE OUTCOMES:

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

CO1: Understand and familiarize themselves with the work environment of companies.

CO2: Learn coordination and cooperation of various teams for the project

CO3: Develop skills necessary for structuring, managing, and carrying out projects within an organization/industry.

CO4: Describe the observations through report writing.

Field Visit and Report

L - T – P	Max. Marks: 75
0-0-4	**Practical: 60**
Time : 3 Hours	**CA: 15**

Note: The marks will be awarded to the candidate on the basis of report submitted.

B.Voc (Artificial Intelligence and Data Science) Semester- I

Course Code: BVIP-1118

Minor Project – I

The primary objective of the course is to encourage students to learn various tools and to build AI/ Data Science based Model: This module is delivered using a combination of introductory lectures and participation activities by the students.

COURSE OUTCOMES:

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

CO1: Apply the tools and techniques learnt in the course to process and analyze data for problems associated with AI and Data science.

CO2: Apply their knowledge to work on assigned/self-identified project.

CO3: Work within defined time and resource constraints while working with real world applications.

B.Voc (Artificial Intelligence and Data Science) Semester- I
Course Code: BVIP-1118
Minor Project – I

L - T – P	Max. Marks: 75
0-2-2	**Practical: 60**
Time : 3 Hours	**CA: 15**

Instructions to the examiner:

The students will be working on a project based on the subjects studied in the course. The students need to submit the self-made project at the end of the semester. The marks will be awarded to the student on the basis of Technical knowledge, Project reports and performance in viva-voce .

B.Voc. (Artificial Intelligence and Data Science) Semester- I
COURSE CODE: AECD-1161
DRUG ABUSE: PROBLEM, MANAGEMENT & PREVENTION

COURSE OUTCOMES:

CO1. This information can include factual data about what substance abuse is; warning signs of addiction; information about how alcohol and specific drugs affect the mind and body;

CO2. Learn to be supportive during the detoxification and rehabilitation process.

CO3. Main focus of substance abuse education is teaching individuals about drug and alcohol abuse and how to avoid, stop, or get help for substance use disorders.

CO4.Substance abuse education is important for students alike; there are many misconceptions about commonly used legal and illegal substances, such as alcohol and marijuana.

B.Voc. (Artificial Intelligence and Data Science) Semester- I

COURSE CODE: AECD-1161

DRUG ABUSE: PROBLEM, MANAGEMENT & PREVENTION

L - T – P	**Max. Marks: 50**
2-0-0	**Theory: 40**
Time : 3 Hours	**CA: 10**

Instructions for the Paper Setter

Eight questions of equal marks 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

1) **Meaning of Drug Abuse**: Meaning, Nature and Extent of Drug Abuse in India and Punjab.

UNIT-II

2) **Consequences of Drug Abuse for**: Individual: Education, Employment, Income. Family: Violence.
Society: Crime

Nation: Law and Order problem.

UNIT-III

3) **Management of Drug Abuse**
Medical management: medication for treatment and to withdrawal effects.

UNIT-IV

4) **Psychiatric Management**: Counselling, Behavioural and Cognitive therapy. Social Management: Family, Group therapy and Environmental Intervention.

References:

1. Ahuja, Ram (2003), *Social Problems in India*, Rawat Publication, Jaipur.
2. Extent, Pattern and Trend of Drug Use in India, Ministry of Social Justice and

Empowerment, Government of India, 2004.
3. Inciardi, J.A. 1981. *The Drug Crime Connection.* Beverly Hills: Sage Publications.
4. Kapoor. T. (1985) *Drug epidemic among Indian Youth*, New Delhi: Mittal Pub.
5. Modi, Ishwar and Modi, Shalini (1997) *Drugs: Addiction and Prevention*, Jaipur: Rawat Publication.
6. National Household Survey of Alcohol and Drug abuse. (2003) New Delhi, Clinical Epidemiological Unit, All India Institute of Medical Sciences, 2004.
7. Sain, Bhim 1991, *Drug Addiction Alcoholism,* Smoking obscenity New Delhi: Mittal Publications.
8. Sandhu, Ranvinder Singh, 2009, *Drug Addiction in Punjab*: A Sociological Study.Amritsar: Guru Nanak Dev University.
9. Singh, Chandra Paul 2000. *Alcohol and Dependence among Industrial Workers*: Delhi: Shipra.
10. Sussman, S and Ames, S.L. (2008). *Drug Abuse: Concepts, Prevention and Cessation,* Cambridge University Press.

COURSE CODE: BVIL-2421

PUNJABI (COMPULSORY)

COURSE OUTCOMES:

CO1: ਆਤਮ ਅਨਾਤਮ ਪੁਸਤਕ ਦੇ ਕਹਾਣੀਭਾਗ ਨੂੰ ਸਿਲੇਬਸ ਵਿਚ ਸ਼ਾਮਿਲ ਕਰ ਕੇ ਵਿਦਿਆਰਥੀਆਂ ਅੰਦਰ ਕਹਾਣੀ ਨੂੰ ਪੜ੍ਹਨ ਦੀ ਰੁਚੀ ਨੂੰ ਪੈਦਾ ਕਰਨਾ ਹੈ ਅਤੇ ਕਹਾਣੀ ਜਗਤ ਨਾਲ ਜੋੜਨਾ ਹੈ।

CO2: ਗਿਆਨ ਮਾਲਾ ਪੁਸਤਕ ਨੂੰ ਸਿਲੇਬਸ ਵਿਚ ਸ਼ਾਮਿਲ ਕਰ ਕੇ ਵਿਦਿਆਰਥੀਆਂ ਅੰਦਰ ਪੜ੍ਹਨ ਦੀ ਰੁਚੀ ਨੂੰ ਪੈਦਾਕਰਨਾ ਹੈ ।

CO3: ਸੰਖੇਪ ਰਚਨਾ ਦਾ ਮਨੋਰਥ ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਸਮੇਂ ਅਤੇ ਮਿਹਨਤ ਦੀ ਬੱਚਤ ਕਰਨ ਬਾਰੇ ਦੱਸਣਾ ਹੈ।

CO4: ਪੈਰ੍ਹਾ ਪੜ੍ਹ ਕੇ ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਉੱਤਰ ਦੇਣ ਦਾ ਮਨੋਰਥ ਵਿਦਿਆਰਥੀਆਂ ਦੀ ਬੁੱਧੀ ਨੂੰ ਤੀਖਣ ਕਰਦਿਆਂ ਉਨ੍ਹਾਂ ਦੀ ਲਿਖਣ ਪ੍ਰਤਿਭਾ ਨੂੰ ਉਜਾਗਰ ਕਰਨਾ ਹੈ।

CO5: ਸ਼ਬਦ ਬਣਤਰ ਅਤੇ ਸ਼ਬਦ ਰਚਨਾ ਪੜ੍ਹਨ ਨਾਲ ਵਿਦਿਆਰਥੀ ਇਸਦੇ ਮੁੱਢਲੇ ਸੰਕਲਪਾਂ ਨੂੰ ਆਧਾਰ ਬਣਾ ਕੇ ਇਹਨਾਂ ਸੰਕਲਪਾਂ ਤੋਂ ਜਾਣੂ ਹੋਣਗੇ ।

CO6:ਸ਼ਬਦ ਸ਼੍ਰੇਣੀਆਂ ਨੂੰ ਪੜ੍ਹਾਉਣ ਦਾ ਮਨੋਰਥ ਵਿਦਿਆਰਥੀਆਂ ਅੰਦਰ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੀ ਅਮੀਰੀ ਦਾ ਅਤੇ ਬਾਰੀਕੀਆਂ ਨੂੰ ਸਮਝਣ ਲਈ ਵੱਖਰੇ -ਵੱਖਰੇ ਸਿਧਾਂਤਾਂ ਦਾ ਵਿਕਾਸ ਕਰਨਾ ਹੈ।

CO7: ਮੁਹਾਵਰਿਆਂ ਦੀ ਵਰਤੋਂਨਾਲ ਗੱਲਬਾਤ ਵਿਚ ਪਰਪੱਕਤਾ ਆਉਂਦੀ ਹੈ।ਇਹ ਵਿਦਿਆਰਥੀਆਂ ਦੀ ਗੱਲਬਾਤ ਵਿਚ ਨਿਖਾਰ ਲਿਆਉਣ ਦਾ ਕੰਮ ਕਰਨਗੇ।

B.Voc. (Artificial Intelligence and Data Science) Semester II

COURSE CODE: BVIL-2421

PUNJABI (COMPULSORY)

L - T – P	Max. Marks: 50
2-0-0	Theory: 40
Time : 3 Hours	CA: 10

ਪਾਠ ਕ੍ਰਮ ਅਤੇ ਪਾਠ ਪੁਸਤਕਾਂ

ਯੂਨਿਟ-I

ਆਤਮ ਅਨਾਤਮ (ਕਵਿਤਾ ਭਾਗ),(ਸੰਪ. ਸੁਹਿੰਦਰ ਬੀਰ ਅਤੇ ਵਰਿਆਮ ਸਿੰਘ ਸੰਧੁ) ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ।

ਪ੍ਰੋ.ਪੂਰਨ ਸਿੰਘ, ਪ੍ਰੋ. ਮੋਹਨ ਸਿੰਘ,ਅੰਮ੍ਰਿਤਾ ਪ੍ਰੀਤਮ, ਜਗਤਾਰ, ਸੁਰਜੀਤ ਪਾਤਰ (ਕਵੀ ਪਾਠ ਕ੍ਰਮ ਦਾ ਹਿੱਸਾ ਹਨ)

(ਸਾਰ, ਵਿਸ਼ਾ ਵਸਤੁ**)**

ਯੂਨਿਟ-II

ਗਿਆਨ ਮਾਲਾ (ਵਿਗਿਆਨਕ ਤੇ ਸਮਾਜ ਵਿਗਿਆਨਕ ਲੇਖਾਂ ਦਾ ਸੰਗ੍ਰਹਿ), (ਸੰਪਾ.ਡਾ. ਸਤਿੰਦਰ ਸਿੰਘ, ਪ੍ਰੋ. ਮਹਿੰਦਰ ਸਿੰਘ ਬਨਵੈਤ), ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ।

ਲੇਖ : ਭਰੂਣ ਹੱਤਿਆ ਦੇ ਦੇਸ਼ ਵਿਚ, ਵਾਤਾਵਰਣੀ ਪ੍ਰਦੂਸ਼ਣ ਅਤੇ ਮਨੁੱਖ, ਏਡਜ਼ : ਇਕ ਗੰਭੀਰ ਸੰਕਟ। **(ਸਾਰ**, ਵਿਸ਼ਾਵਸਤੁ**)**

ਯੂਨਿਟ-III

(ੳ) ਪੈਰ੍ਹਾ ਰਚਨਾ

(ਅ) ਪੈਰ੍ਹਾ ਪੜ੍ਹ ਕੇ ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਉਤਰ।

ਯੂਨਿਟ-IV

(ੳ)ਪੰਜਾਬੀ ਧੁਨੀ ਵਿਉਂਤ: ਪਰਿਭਾਸ਼ਾ,ਉਚਾਰਨ ਅੰਗ

(ਅ)ਸਵਰ, ਵਿਅੰਜਨ

ਅੰਕ ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

1.   ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਚਾਰ ਸੈਕਸ਼ਨ ਹੋਣਗੇ।ਸੈਕਸ਼ਨ A-D ਤੱਕ ਦੇ ਪ੍ਰਸ਼ਨ ਯੂਨਿਟI-IV ਵਿਚੋਂ ਪੁੱਛੇ ਜਾਣਗੇ। ਹਰ ਸੈਕਸ਼ਨ ਵਿਚ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।

2. ਵਿਦਿਆਰਥੀ ਨੇ ਕੁੱਲ ਪੰਜ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਸੈਕਸ਼ਨ ਵਿਚੋਂ ਇਕ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਸੈਕਸ਼ਨ ਵਿਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।

3. ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ 08 ਅੰਕ ਹਨ।

4. ਪੇਪਰ ਸੈੱਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋ ਵੱਧ ਚਾਰ ਉਪ ਪ੍ਰਸ਼ਨਾਂ ਵਿਚਕਰ ਸਕਦਾ ਹੈ।

B.Voc (Artificial Intelligence and Data Science) Semester- II
Course Code: BVIL-2031

BASIC PUNJABI

COURSE OUTCOMES:

CO1:ਆਤਮ ਅਨਾਤਮ ਪੁਸਤਕ ਦੇ ਕਹਾਣੀ ਭਾਗ ਨੂੰ ਸਿਲੇਬਸ ਵਿਚ ਸ਼ਾਮਿਲਕਰ ਕੇ ਵਿਦਿਆਰਥੀਆਂ ਅੰਦਰ ਕਹਾਣੀ ਨੂੰ ਪੜ੍ਹਣ ਦੀ ਰੁਚੀ ਨੂੰ ਪੈਦਾ ਕਰਨਾ ਹੈ ਅਤੇ ਕਹਾਣੀ ਜਗਤ ਨਾਲ ਜੋੜਣਾ ਹੈ।

CO2:ਗਿਆਨ ਮਾਲਾ ਪੁਸਤਕ ਨੂੰ ਸਿਲੇਬਸ ਵਿਚ ਸ਼ਾਮਿਲ ਕਰ ਕੇ ਵਿਦਿਆਰਥੀਆਂ ਅੰਦਰ ਪੜ੍ਹਣ ਦੀ ਰੁਚੀ ਨੂੰ ਪੈਦਾ ਕਰਨਾ ਹੈ ।

CO3:ਸੰਖੇਪ ਰਚਨਾ ਦਾ ਮਨੋਰਥ ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਸਮੇਂ ਅਤੇ ਮਿਹਨਤ ਦੀ ਬੱਚਤ ਕਰਨ ਬਾਰੇ ਦੱਸਣਾ ਹੈ।

CO4:ਪੈਰ੍ਹਾ ਪੜ੍ਹ ਕੇ ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਉੱਤਰ ਦੇਣ ਦਾ ਮਨੋਰਥ ਵਿਦਿਆਰਥੀਆਂ ਦੀ ਬੁੱਧੀ ਨੂੰ ਤੀਖਣ ਕਰਦਿਆਂ ਉਨ੍ਹਾਂ ਦੀ ਲਿਖਣ ਪ੍ਰਤਿਭਾ ਨੂੰ ਉਜਾਗਰ ਕਰਨਾ ਹੈ।

CO5:ਸ਼ਬਦ ਬਣਤਰ ਅਤੇ ਸ਼ਬਦ ਰਚਨਾ ਪੜ੍ਹਣ ਨਾਲ ਵਿਦਿਆਰਥੀ ਇਸਦੇ ਮੁੱਢਲੇ ਸੰਕਲਪਾਂ ਨੂੰ ਆਧਾਰ ਬਣਾ ਕੇ ਇਹਨਾਂ ਸੰਕਲਪਾਂ ਤੋਂਜਾਣੂ ਹੋਣਗੇ ।

CO6:ਸ਼ਬਦ ਸ਼੍ਰੇਣੀਆਂ ਨੂੰ ਪੜ੍ਹਾਉਣ ਦਾ ਮਨੋਰਥ ਵਿਦਿਆਰਥੀਆਂ ਅੰਦਰ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੀ ਅਮੀਰੀ ਦਾ ਅਤੇ ਬਾਰੀਕੀਆਂ ਨੂੰ ਸਮਝਣ ਲਈ ਵੱਖਰੇ -ਵੱਖਰੇ ਸਿਧਾਂਤਾਂ ਦਾ ਵਿਕਾਸ ਕਰਨਾ ਹੈ।

CO7:ਮੁਹਾਵਰਿਆਂ ਦੀ ਵਰਤੋ 'ਨਾਲ ਗੱਲਬਾਤ ਵਿਚ ਪਰਪੱਕਤਾ ਆਉਂਦੀ ਹੈ।ਇਹ ਵਿਦਿਆਰਥੀਆਂ ਦੀ ਗੱਲਬਾਤ ਵਿਚ ਨਿਖਾਰ ਲਿਆਉਣ ਦਾ ਕੰਮ ਕਰਨਗੇ।

BASIC PUNJABI

L - T – P	Max. Marks: 50
2-0-0	Theory: 40
Time : 3 Hours	CA: 10

ਪਾਠ ਕ੍ਰਮ

ਯੂਨਿਟ-I

ਸ਼ਬਦ ਸ਼੍ਰੇਣੀਆਂ: ਪਛਾਣ ਅਤੇ ਵਰਤੋਂ (ਨਾਂਵ, ਪੜਨਾਂਵ, ਕਿਰਿਆ, ਵਿਸ਼ੇਸ਼ਣ, ਕਿਰਿਆ ਵਿਸ਼ੇਸ਼ਣ, ਸਬੰਧਕ, ਯੋਜਕ ਅਤੇ ਵਿਸਮਿਕ)

ਯੂਨਿਟ-II

ਪੰਜਾਬੀ ਵਾਕ ਬਣਤਰ: ਮੁੱਢਲੀ ਜਾਣ ਪਛਾਣ

(ੳ) ਸਾਧਾਰਨ ਵਾਕ, ਸੰਯੁਕਤਵਾਕ ਅਤੇ ਮਿਸ਼ਰਤਵਾਕ (ਪਛਾਣ ਅਤੇ ਵਰਤੋਂ)

(ਅ) ਬਿਆਨੀਆ ਵਾਕ, ਪ੍ਰਸ਼ਨਵਾਚਕ ਵਾਕ ਅਤੇ ਹੁਕਮੀ ਵਾਕ (ਪਛਾਣ ਅਤੇ ਵਰਤੋਂ)

ਯੂਨਿਟ-III

ਪੈਰ੍ਹਾ ਰਚਨਾ

ਸੰਖੇਪ ਰਚਨਾ

ਯੂਨਿਟ-IV

ਚਿੱਠੀ ਪੱਤਰ (ਘਰੇਲੂ ਅਤੇ ਦਫਤਰੀ)

ਮੁਹਾਵਰੇ

ਅੰਕ ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

1. ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਚਾਰ ਸੈਕਸ਼ਨ ਹੋਣਗੇ।ਸੈਕਸ਼ਨ A-D ਤੱਕ ਦੇ ਪ੍ਰਸ਼ਨ ਯੂਨਿਟI-IV ਵਿਚੋਂ ਪੁੱਛੇ ਜਾਣਗੇ। ਹਰ ਸੈਕਸ਼ਨ ਵਿਚ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।
2. ਵਿਦਿਆਰਥੀ ਨੇ ਕੁੱਲ ਪੰਜ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਸੈਕਸ਼ਨ ਵਿਚੋਂ ਇਕ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਸੈਕਸ਼ਨ ਵਿਚੋਂਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।
3. ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ 08 ਅੰਕ ਹਨ।
4. ਪੇਪਰ ਸੈੱਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋ ਵੱਧ ਤੋਂਵੱਧ ਚਾਰ ਉਪ ਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕਰ ਸਕਦਾ ਹੈ।

B.Voc. (Artificial Intelligence and Data Science) Semester- II

COURSE CODE: BVIL-2431

Punjab History and Culture (C. 320 to 1000 B.C.)

(Special paper in lieu of Punjabi Compulsory)

COURSE OUTCOMES:

After completing Semester II and course on Ancient History of Punjab, students of History will be able to identify and have a complete grasp on the sources & writings of Ancient History of Punjab

CO 1: Analyse the emergence of Mauryan, Gupta empires during the classical age in India

CO 2: To understand the various factors leading to rise and fall of empires and emergence of new dynasties and their Culture, society, administration, polity and religion specifically of Kushans and Vardhanas in the Punjab

CO 3: Students will be adept in constructing original historical argument based on primary source material research

CO 4: To have an insight on the existing Literature of this period and understand the past developments in the light of present scenario.

CO 5: To enable students to have thorough insight into the various forms/styles of Architecture and synthesis of Indo - Muslim Art and Architecture in Punjab

B.Voc (Artificial Intelligence and Data Science) Semester- II

COURSE CODE: BVIL-2431

Punjab History and Culture (C. 320 to 1000 B.C.)

(Special paper in lieu of Punjabi Compulsory)

L - T – P	**Max. Marks: 50**
2-0-0	**Theory: 40**
Time : 3 Hours	**CA: 10**

Instructions for the Paper Setter:

1. Question paper shall consist of four Units

2. Examiner shall set 8 questions in all by selecting Two Questions of equal marks from each Unit.

3. Candidates shall attempt 5 questions in 600 words, by at least selecting One Question from each Unit and the 5th question may be attempted from any of the four Units.

4. Each question will carry 8 marks

Unit-I

1. Alexander's Invasion's and Impact

2. Administration of Chandragupta Maurya and Ashoka.

Unit-II

3. The Kushans: Gandhar School of Art .

4. Gupta Empire: Golden period (Science , Art and Literature)

Unit-III

5. The Punjab under the Harshvardhana

6. Socio-cultural History of Punjab from 7th to 1000 A.D.

UNIT IV

7. Development of Languages and Education with Special reference to Taxila

8. Development to Art and Architecture

References/ Textbooks

1. L. M Joshi (ed), *History and Culture of the Punjab*, Art-I, Punjabi University, Patiala, 1989 (3rd edition)

2. L.M. Joshi and Fauja Singh (ed.), *History of Punjab* , Vol.I, Punjabi University, Patiala, 1977.

3. Budha Parkash, *Glimpses of Ancient Punjab*, Patiala, 1983.

4. B.N. Sharma: *Life in Northern India*, Delhi. 1966.

B.Voc. (Artificial Intelligence and Data Science) Semester- II

Course Code: BVIM-2102

COMMUNICATION SKILLS IN ENGLISH

COURSE OUTCOMES:

After passing this course the student will develop the following Skills:

CO1: Enhancement of listening skills with the help of listening exercises based on conversation, news and TV reports.

CO2: Improvement of speaking skills enabling them to converse in a specific situation.

CO3: Acquisition of knowledge of phonetics which will help them in learning about correct pronunciation as well as effective speaking.

CO4: The capability to present themselves well in a job interview.

CO5: The ability of Note-Taking to be able to distinguish the main points from the supporting details and the irrelevant information from the relevant one.

CO6: Speaking skills of the students enabling them to take active part in group discussion and present their own ideas.

CO7: The capability of narrating events and incidents in a logical sequence.

B.Voc. (Artificial Intelligence and Data Science) Semester- II

Course Code: BVIM-2102

COMMUNICATION SKILLS IN ENGLISH

L - T – P	Max. Marks: 50
3-0-1	Theory: 20 Practical:15
Time : 3 Hours	CA: 10

Instructions for the paper setters and distribution of marks:

The question paper will consist of four sections and distribution of marks will be as under:

Section-A: Two questions of theoretical nature will be set from Unit I of the syllabus and the candidates will have to attempt one carrying 5 marks.

Section-B: Two questions will be set from Unit II of the syllabus. One will be theoretical and the second will be practical in nature. Candidates will have to attempt one carrying 5 marks.

Section-C: Two questions will be given based on the topics given in the Unit III and the candidates will have to attempt one carrying 5 marks.

Section-D: Two questions will be set from Unit IV of the syllabus. One question will be theoretical in nature and the other will be practical in nature (based on phonetic transcription and stress). Candidates will have to attempt one carrying 5 marks.

Important Note:

The candidate will have to attempt five questions in all selecting one from each section of the question paper and the fifth question may be attempted from any of the four sections.   (5 x 5 = 25)

Course Contents:

Unit I

Listening Skills: Barriers to listening; effective listening skills; feedback skills.**Activities:** Listening exercises – Listening to conversation, News and TV reports

Unit II

Attending telephone calls; note taking and note making.

Activities: Taking notes on a speech/lecture

Unit III

Speaking and Conversational Skills: Components of a meaningful and easy conversation; understanding the cue and making appropriate responses; forms of polite speech; asking and providing information on general topics.

Activities: 1) Making conversation and taking turns

2) Oral description or explanation of a common object, situation or concept

Unit IV

The study of sounds of English, stress Situation based

Conversation in English Essentials of Spoken English **Activities:**

Giving Interviews

References/ Textbooks:

1. *Oxford Guide to Effective Writing and Speaking* by John Seely.
2. *Business Communication* by Sethi, A and Adhikari, B., McGraw Hill Education 2009.
3. *Communication Skills by Raman, M. & S. Sharma, OUP, New Delhi, India (2011).*
4. *A Course in Phonetics and Spoken English* by J. Sethi and P.V. Dhamija, Phi Learning.

PRACTICAL / ORAL TESTING

Time: 3 hours   **Marks: 15**

Course Contents:

1. Oral Presentation with/without audio visual aids.
2. Group Discussion.
3. Listening to any recorded or live material and asking oral questions for listening comprehension.

Questions:

1. Oral Presentation will be of 5 to 7 minutes duration. (Topic can be given in advance or it can be of student's own choice). Use of audio-visual aids is desirable.
2. Group discussion comprising 8 to 10 students on a familiar topic. Time for each group will be 15 to 20 minutes.

Note: Oral test will be conducted by external examiner with the help of internal examiner.

Bachelor of Vocation (Artificial Intelligence and Data Science) Semester II

Course Code: BVIL-2113

Computational Problem Solving

COURSE OUTCOMES:

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

CO1: Comprehend the concepts of computation problem, data and expressions

CO2: Demonstrate the usage of algorithms under several categories like list, string, dictionary and control structures

CO3: Implement various problems associated with functions and file handling using related languages

CO4: Comprehend the concepts of Object Oriented Programming and Database using related programming language

B.Voc. (Artificial Intelligence and Data Science) Semester II

Course Code: BVIL-2113

Computational Problem Solving

L - T – P	Max. Marks: 75
3-0-0	Theory: 60
Time : 3 Hours	CA: 20

Instructions for Paper Setter -
Eight questions of equal marks are to 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 Python: Process of Computational Problem Solving, Python Programming Language

Data and Expressions: Literals, Variables and Identifiers, Operators, Expressions, Statements and Data Types

Control Structures: Boolean Expressions (Conditions), Logical Operators, Selection Control, Nested conditions, Debugging

UNIT-II

Lists: List Structures, Lists (Sequences) in Python, Iterating Over Lists (Sequences) in Python

Dictionaries: Dictionaries and Files, Looping and dictionaries, Advanced text parsing

Iteration: While statement, Definite loops using for, Loop Patterns, Recursive Functions, Recursive Problem Solving, Iteration vs. Recursion

UNIT-III

Functions: Fundamental Concepts, Program Routines, Flow of Execution, Parameters & Arguments

Files: Opening Files, Using Text Files, String Processing, Exception Handling

UNIT-IV

Objects and Their Use: Introduction to Object Oriented Programming

Modular Design: Modules, Top-Down Design, Python Modules

Using Databases and SQL: Database Concepts, SQLite Manager Firefox Add-on, SQL basics summary, basic Data Modelling, Programming with multiple tables.

References/ Textbooks:

1. Charles Severance, "Python for Informatics: version0.0.8-d2", Amazon Digital Services, Second Edition, 2013.

2. Charles Dierbach, "Introduction to Computer Science Using Python: A Computational Problem-Solving Focus", First Edition, John Wiley & Sons, 2013.

3. GUTTAG JOHN V, "Introduction to Computation and Programming Using Python", Second Edition, PHI, 2014.

4. Jeeva Jose, Sojan P.Lal, "Introduction to Computing & Problem Solving Through Python", First Edition, Khanna Publishers, 2015.

5. Mark J. Guzdial, Barbara Ericson, "Introduction to Computing and Programming in Python", First Edition, Pearson Education, 2015.

6. Kenneth Lambert, "Fundamentals of Python", First Edition, Cengage Learning, 2015.

7. Mark Lutz, "Learning Python", Fifth Edition, O'Reilly Media, 2013.

B.Voc. (Artificial Intelligence and Data Science) Semester- II
Course Code: BVIL-2114
Mathematical Foundation

COURSE OUTCOMES:

After passing this course the student will be able to reflect on

CO1: Set and operations on sets

CO2: Relation, Representation of Relation, Types of Relation and their Properties

CO3: To encode information in form of logical sentences through propositional and predicate logic

CO4: Concept of Duality law, Algebra of propositions, Propositional Functions, Predicates, Quantifiers, Negation of Quantified Statements

B.Voc (Artificial Intelligence and Data Science) Semester- II
Course Code: BVIL-2114

Mathematical Foundation

L - T – P	Max. Marks: 50
2-0-0	Theory: 40
Time : 3 Hours	CA: 10

UNIT-I

Definition of Set, Representation of Sets, Types of Sets,

Operations on Sets – Intersection, Union, Complement, Set Difference, Symmetric Difference.

Problems on Cardinality of Sets, Venn diagram, Laws of Set theory, Countable and Uncountable sets, Cartesian product, Partition of Set, Minset, Maxset, Normal Forms.

UNIT-II

Definition of Relation, Representation of Relation, Types of Relation, Properties of Relation – Reflexive, Symmetric, Anti-Symmetric, Asymmetric, Transitive, Equivalence, Irreflexive, POSET,

Representation of relation: Digraph, Matrix and ordering diagram

UNIT-III

Proposition and Compound Propositions, basic Logical Operations, Propositions and Truth Tables, Tautologies and Contradictions, Logical Implication, Logical Equivalence,

UNIT IV

Duality law, Algebra of propositions, Arguments, Propositional Functions, Predicates and Quantifiers, Negation of Quantified Statements.

References/ Textbooks:
1. Lipschutz S., Lipson M., "Discrete Mathematics", Revised Third Edition, Schaum's outlines Series, 2017.

2. Kolman, Busby "Discrete Mathematical structures for Computer Sciences", Second Edition, PHI, 1987.

3. Alan Doerr, "Applied Discrete Structures for Computer Science", First Edition, Galgotia Publications, 1991.

4. Trambley J.P., "Manohar R., Discrete Mathematical Structures with Applications to Computer Science", First Edition, O'Reilly, 2002.

Technical Writing

COURSE OUTCOMES:

After completing this course the students will be able to:

CO1: Write effective reports, proposals and papers.

CO2: Correspond effectively through different modes of written communication.

CO3: Present himself/ herself professionally through effective resumes and interviews.

CO4: Understand different technical writing style and concept of editing.

B.Voc (Artificial Intelligence and Data Science) Semester- II
Course Code: BVIL-2115

Technical Writing

L - T – P	Max. Marks: 50
3-0-0	Theory: 40
Time : 3 Hours	CA: 10

UNIT-I

Technical Communication Overview: Meaning of Technical Writer, Role of Technical Writer, Evolution of Technical Communication Characteristics of Technical Communication, Essential Skills of Technical Communication.

UNIT-II

Goals of Technical Writing, Process of Technical Writing – Prewriting, wiring and Re-writing.

Audience Analysis: Basic Classification of Readers, Types of Audiences, Audience Analysis.

UNIT-III

Research Interviews: Research Tools, Conducting Interviews: Pre-Interview, During Interview, After the Interview, Validation.

Technical Writing Style: Concise Communication, Common Errors while constructing sentences. Clarity and Precision: Guidelines to clear and specific writing.

UNIT-IV

Technical Communication Editing: Meaning, Types of Editing, Role of a Technical Editor.

Proof Reading: Proof reading symbols, Abbreviations.

Technical Communication Ethics: What is Legal & Ethical? Ethical Issues in Technical Communication.

References/Textbooks:

1. Elizabeth Tebeaux, Sam Dragga, "The Essentials of Technical Communication", First Edition, OUP USA, 2012.
2. Alan S. Pringle, Sarah S. O'Keefe, "Technical Writing 101",First Edition, Scriptorium Publishing Services, Inc., 2009.

3. Mike Markel, "Technical Communication", First Edition, Bedford Publishers, 2009.

4. Sheryl Lindsell-Roberts, "Technical Writing For Dummies", First Edition, Wiley Publishers, 2011.

5. Kieran Morgan, SanjaSpajic, "Technical Writing Process",First Edition, Better On Paper Publications, 2015.

6. Phillip A. Laplante, "Technical Writing: A Practical Guide for Engineers and Scientists", Second Edition, CRC Press, 2014.

B.Voc. (Artificial Intelligence and Data Science) Semester- II
COURSE CODE: BVIL-2116
Data Collection and Analysis

COURSE OUTCOMES:

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

CO1: Comprehend the term Data Collection and Analytics and Data Collection methods

CO2: Describe the application of basic Data Analysis Tools.

CO3: Understand the process of Data Analysis along with its applications.

CO4: Comprehend Data Analysis using spreadsheet software and Data Analysis tools.

B.Voc. (Artificial Intelligence and Data Science) Semester- II

COURSE CODE: BVIL-2116

Data Collection and Analysis

L - T – P	Max. Marks: 75
4-0-0	Theory: 60
Time : 3 Hours	CA: 15

UNIT I

Introduction to the terms: Data Collection and Data Analytics.

Data Collection sources, Data collection methods – Primary data collection methods and Secondary data collection methods.

UNIT II

Data Collection Tools – online and offline.

Understanding Data Analytics: Why Data analytics Matter, Characteristics of Data Analysis, Types- Descriptive. Predictive, Diagnostic, Prescriptive.

UNIT III

Process of Data Analysis, Applications of Data Analysis. Technical Skills of a data Analyst. Exploratory and Confirmatory Data Analysis.

UNIT IV

Data Analysis using spreadsheet . Creating Complex Formulas , Working with Basic Functions - to find values for a range of cells. Data Analysis tools: Analyze, Detect, Fill from, Forecast, Scenario tool, Google tools: google sheet, forms, collaborations

References/ Textbooks:

1. Patricia Pulliam Phillips, Cathy A. Stawarski, "Data Collection: Planning for and Collecting All Types of Data", Wiley Publisher, First Edition, 2008.
2. Roger Sapsford, Victor Jupp, "Data Collection -and Analysis", Second Edition, Sage Publishing, 2006.
3. Uwe Flick, "The SAGE Handbook of Qualitative Data Collection", First Edition, Sage Publishing, 2018.
4. A. Maheshwari, "Data Analytics Made Accessible",Third Edition, McGraw Hill India, 2020.
5. John Walkenbach, "Excel 2010 Bible" First Edition, Wiley, 2010.
6. Wayne L. Winston, "Microsoft Excel Data Analysis and Business Modeling" First Edition, Microsoft Press, 2017.

B.Voc. (Artificial Intelligence and Data Science) Semester- II
Course Code: BVIL-2117

Database Management System

COURSE OUTCOMES:

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

CO1: Understand the various terms like database, database models and ER diagrams.

CO2: Comprehend Relational Algebra and Relational Calculus

CO3: Explain the concept of database normalization and its various forms

CO4: Demonstrate the use of SQL to create basic to intermediate level of databases

CO5: Comprehend the concept of Cursors and Triggers

B.Voc. (Artificial Intelligence and Data Science) Semester- II
Course Code: BVIL-2117

Database Management System

L - T – P	Max. Marks: 75
4-0-0	Theory: 60
Time : 3 Hours	CA: 15

UNIT-I

Introduction to Data, Field, Record, File, Database, Database Management System. Structure of database system, Advantages and Disadvantages, levels of database system, Relational model, Hierarchical model, Network model, comparison of models, E-R diagram, different keys used in a relational system, DBA, responsibilities of DBA.

UNIT-II

Codd's Rules, Relational Algebra, Relational Calculus - Domain and Tuple relational calculus,

UNIT-III

Introduction to normalization – need and advantages of normalization, INF, 2NF, 3NF, BCNF, 4NF and 5NF, Introduction to transaction management – ACID Properties, concurrency control and its management, protection, security, recovery of database

UNIT-IV

SQL: Introduction to SQL–DDL, DML, DCL, Join methods & sub query, Union Intersection, Minus, Built in Functions, Views, Security amongst users, sequences, Indexing

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

References / Textbooks:

1. Parteek Bhatia, Gurvinder Singh, "Simplified Approach to DBMS", Eighth Edition, Kalyani Publisher, 2016.
2. C.J. Date, "An Introduction to Database System", Eighth Edition,Pearson, 2015.
3. B.C. Desai, "Database Management System", Revised First Edition, Galgotia Publication, 2012.
4. Silberschatz, Henry F. Korth, S. Sudarshan, "Database Concepts", Seventh Edition,Mcgraw Hills, 2016.
5. IvanBayross, "Oracle – Developer – 2000", Third Edition, BPB Publishers,2010.

B.Voc. (Artificial Intelligence and Data Science) Semester- II
Course Code: BVIP-2118

Computational Problem Solving Lab

L - T – P		Max. Marks: 50
0-0-2		Theory: 40
Time : 3 Hours		CA: 10

Lab based on computational problem solving

B.Voc. (Artificial Intelligence and Data Science) Semester- II
Course Code: BVID-2119

Minor Project-II

Course Outcomes:

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

CO1: Apply the tools and techniques learnt in the course to process and analyze data for problems associated with AI and Data science.

CO2: Apply their knowledge to work on assigned/self-identified project.

CO3: Demonstrate an ability to work in teams and manage the conduct of the research study.

CO4: Describe the observations through project report submission.

B.Voc. (Artificial Intelligence and Data Science) Semester- II
Course Code: BVID-2119

Minor Project-II

L - T – P	Max. Marks: 50
0-0-2	Practical:40
Time : 3 Hours	CA: 10

Note: The students need to submit the self-made project at the end of the Semester. The marks will be awarded to the student on the basis of quality showcased in the project to build AI/ Data Science based Model.

Course Code: AECD-2161

DRUG ABUSE

COURSE OUTCOMES:

CO1: This information can include factual data about what substance abuse is; warning signs of addiction; information about how alcohol and specific drugs affect the mind and body

CO2. Learn to be supportive during the detoxification and rehabilitation process.

CO3: Main focus of substance abuse education is teaching individuals about drug and alcohol abuse and how to avoid, stop, or get help for substance use disorders.

CO4: Substance abuse education is important for students alike; there are many misconceptions about commonly used legal and illegal substances, such as alcohol and marijuana.

B.Voc (Artificial Intelligence and Data Science) Semester- II
Course Code: AECD-2161
DRUG ABUSE: PROBLEM, MANAGEMENT & PREVENTION

L - T – P	Max. Marks: 50
2-0-0	Practical:40
Time : 3 Hours	CA: 10

Instructions for the Paper Setter

Eight questions of equal marks 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

Prevention of Drug abuse: Role of family: Parent child relationship, Family support, Supervision, Shaping values, Active Scrutiny.

UNIT-II

School: Counselling, Teacher as role-model. Parent-teacher-Health Professional Coordination, Random testing on students.

UNIT-III

Controlling Drug Abuse: Media: Restraint on advertisements of drugs, advertisements on bad effects of drugs, Publicity and media, Campaigns against drug abuse, Educational and awareness program

UNIT-IV

Legislation: NDPs act, Statutory warnings, Policing of Borders, Checking Supply/ Smuggling of Drugs, Strict enforcement of laws, Time bound trials.

References/ Textbooks:

1. Ahuja, Ram (2003), *Social Problems in India*, Rawat Publication, Jaipur.
2. Extent, Pattern and Trend of Drug Use in India, Ministry of Social Justice and Empowerment, Government of India, 2004.
3. Inciardi, J.A. 1981. *The Drug Crime Connection.* Beverly Hills: Sage Publications.
4. Kapoor. T. (1985) *Drug epidemic among Indian Youth*, New Delhi: Mittal Pub.
5. Modi, Ishwar and Modi, Shalini (1997) *Drugs: Addiction and Prevention*, Jaipur: Rawat

Publication.

6. National Household Survey of Alcohol and Drug abuse. (2003) New Delhi, Clinical Epidemiological Unit, All India Institute of Medical Sciences, 2004.

7. Sain, Bhim 1991, *Drug Addiction Alcoholism,* Smoking obscenity New Delhi: Mitta Publications.

8. Sandhu, Ranvinder Singh, 2009, *Drug Addiction in Punjab*: A Sociological Study. Amritsar: Guru Nanak Dev University.

9. Singh, Chandra Paul 2000. *Alcohol and Dependence among Industrial Workers*: Delhi: Shipra.

10. Sussman, S and Ames, S.L. (2008). *Drug Abuse: Concepts, Prevention and Cessation,* Cambridge University Press.