GEOGRAPHYHONOURS/MAJOR(NEP)

GRADUATE ATTRIBUTES IN GEOGRAPHY

Some of the Graduate attributes of a graduate in Geography are:-

- **Disciplinary knowledge and skills-** Acquiring sound knowledge to understand the major concepts ,theoretical principles and practical applicability in core Geography and its different sub -fields like Geomorphology, Climatology and climate change, changing perspectives of Human Geography, Pedology, Ecology and Bio- geography, Environmental geography, Forest and wildlife management, Regional Planning, Cartography, Regional Geography, Economic Geography, Philosophy of Geography etc. with special reference to Resource Geography, Research Methodology, Sustainable Geography, Remote Sensing, GIS & GNSS, Hazard management and other related fields of study including broader interdisciplinary sub –fields like Geology, Mathematics, Physics, Chemistry, Life Sciences, Environmental Sciences, Information Technology etc.

- **Skilled Interpreter-** Ability to explain complex geographical information in a clear and concise manner in writing as well as ability to express complicated concepts in a simple language for better understanding of the subject.

- **Critical Observer and Analyzer -** Ability to observe, understand and analyse geographical phenomena critically.

- **Attitude of Investigation -** Ability to ask relevant questions relating to the geographical issues and problems so that the problem area may be developed properly.

- **Efficient Planner-**Capable of formulating proper regional plans on the basis of resource inventory to solve the problem in question with appropriate planning, implementation and regular monitoring.

- **Team activity-** Capable of working efficiently in diverse teams in classroom as well as field-based situations.

- **Trained professional –** Ability to deal with problems related with changing climatic scenario as well as hazard and disaster management as a skilled professional.

- **Expert Field investigator-** Capable of conducting the Field work, the key activity of Geography by collecting proper primary data to understand and resolve the actual problem for the overall development of the area.

- **Digitally efficient –** Capable of using computers for GIS and GNSS studies as well as developing ability to utilize appropriate numerical and statistical methods related to Geography.

- **Ethical awareness -** Development of demonstrating ability to think and analyze rationally with modern and scientific outlook and identify ethical issues to avoid unethical practices like falsification, committing plagiarism etc. Developing ability to adopt unbiased objectives and following truthful activities in all geographical spheres.

- **Lifelong learners-** Capable of self- paced and self- directed learning for personal development as well as to improve skill and knowledge leading to reskilling in all spheres of geography.

- **National and International perspective –** The graduates should prepare themselves during their most formative years for their appropriate role to contribute towards the national development by reducing regional disparities as well as to highlight our national priorities internationally pertaining to their field of interest and future proficiency.

- **Nature is the Laboratory of Geography-** Ability to relate with the nature as well as with the environment appropriately for the essential issue of maintaining nature-human co-existence following the measures of Sustainable development oriented towards nurturing the balance of ecology and biosphere.

- **Maintenance of sustainability-** Ability to apply the measures of sustainability in all spheres of life with genuine dedication.

GEOGRAPHYHONOURS/MAJOR(NEP)

PROGRAM LEARNING OUTCOMES (POs) IN B.SC. (HONOURS) GEOGRAPHY (NEP)

The graduate students with the Degree of B.A/B.Sc (Honours) in Geography should be able to:-

- Acquiring a structured understanding of the academic field of Geography.

- Linkages with related disciplines and various types of related professional fields.

- Application of geographical concepts in most recent and emerging developments.

- Demonstrate the systematic geographical knowledge towards current problems along with their solutions.

- Specific skills in Map making to analyze various problems on the space.

- Ability to evaluate critically the spatial aspects in all levels on different time scales.

- Career oriented skill development.

- Application of acquired knowledge in daily life focusing the changing scenario.

- Communication skill towards utilizing acquired knowledge both theoretically and practically.

- Developing analytical skill to evaluate geographical problems.

- Appropriate skill in the proper application of most recent geographical research tools.

- Pertinent skill in the identification and explanation of physico- cultural characteristics and processes.

- Understanding man-environment and nature-society interactions along with global environmental challenges.

- Developing skills in the analysis of geographical information through geo-spatial technologies.

- Responding the global and national challenges.

- Utilization of Field experience-based knowledge towards recent geographical problems with pragmatic solutions.

Programme Outcomes (POs) in Geography (Major):

PO 1: Basic concept

PO 2: Linkage with other disciplines

PO 3: Application of geographical concepts

PO 4: Problem identification and solution making approach

PO 5: Map making skill

PO 6: Critical Evaluation

PO 7: Skill Development

PO 8: Applied dimension

PO 9: Communication skills

PO 10: Analytical Skill

PO 11: Use of research tools

PO 12: Identification of geographical characteristic and processes

PO 13: Understanding man-environment relation

PO 14: Application of geo-spatial technologies

PO 15: Response to challenges

PO 16: Field based knowledge

Course Outcomes (COs)
Discipline-specific Course: Honours (H – CC)

CC1: PHYSICAL GEOGRAPHY
(Credits: 04; Theory-03, Practical: 01)

Course Learning Outcome (CLOs):

The students will acquire knowledge about-

CO 1: Cartography focusing concept and applications of different types of scales and projections along with components and classification of maps.

CO 2: Geotectonics mainly the internal structure of the earth in relation with seismic waves.

CO 3: Geomorphic processes and resultant landforms like weathering and various agents of erosion along with some other denudation processes and landforms produced by fluvial processes.

CO 4: Nature, composition and layering of the atmosphere with special reference to circulation in the atmosphere.

CO 5: Accumulate clear concept about factors of soil formation along with evolution of an ideal soil profile.

CO 6: Biogeography by gathering knowledge about plant adaptation and distribution according to water availability.

CO 7: True concept of nature and classification of hazards and disasters in Indian context.

CO 8: In the Laboratory course students learn first-hand-

       i) Graphical construction of different types of scales,

       i) Delineation of drainage basins on Survey of India1:50,000 topographical map to determine stream Ordering and Bifurcation ratio.

       iii) IdentificationofdrainageandchannelpatternsfromSurveyofIndia1:50,000topographicalmaps.

       iv) Construction and interpretation of Wind rose diagram.

GEOGRAPHYHONOURS/MAJOR(NEP)

PO-CO Mapping

Course Code: CC 1

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13	PO14	PO 15	PO 16
CO1	√	√	√	√	√	√	√	√	√	√	√	X	X	√	√	X
CO2	√	√	√	√	X	√	√	√	√	√	√	√	X	√	√	√
CO3	√	√	√	√	X	√	√	√	√	√	√	√	√	√	√	√
CO4	√	√	√	√	X	√	√	√	√	√	√	√	√	√	√	X
CO5	√	√	√	√	X	√	√	√	√	√	√	√	√	X	√	√
CO6	√	√	√	√	X	√	√	√	√	√	X	√	X	X	√	X
CO7	√	√	√	√	X	√	√	√	√	√	√	√	√	√	√	√
CO8	√	√	√	√	√	√	√	√	√	√	√	√	X	√	√	√

GEOGRAPHYHONOURS/MAJOR(NEP)

Course Outcomes (COs)
Discipline-specific Course: Honours (H – CC)

CC2: HUMAN GEOGRAPHY
(Credits: 04; Theory-03, Practical: 01)

Course Learning Outcome (CLOs):

The students will acquire knowledge about-

CO 1: Nature, scope, recent trends and elements of Human Geography in special reference to different schools of thought.

CO 2: Evolution of human society in temporal sense and spatially, human adaptation to the environment with a journey focusing post- industrial urban societies.

CO 3: Population Geography with special reference to the concept of Demographic transition and demographic dividend as well as distribution, density and growth of population in India.

CO 4: Characteristics of Urban and Rural settlements with special reference to site, situation, types and patterns of rural settlement as well as morphology and hierarchy of urban settlement after Census of India.

CO 5: In the Laboratory course students learn first-hand-

i) Measurement of Arithmetic growth rate of population comparing two decadal datasets.

ii) Representation and interpretation of population density by Choropleth Method.

iii) Identification of types of settlements from Survey of India1:50,000 topographical map.

iv) Construction of Proportional Squares to have a clear concept regarding distribution of households.

GEOGRAPHYHONOURS/MAJOR(NEP)

PO-CO Mapping

Course Code: CC 2

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13	PO14	PO 15	PO 16
CO1	√	√	√	√	X	√	√	√	√	√	X	√	√	√	√	√
CO2	√	√	√	√	X	√	√	√	√	√	X	√	√	√	√	√
CO3	√	√	√	√	X	√	√	√	√	√	√	√	√	√	√	√
CO4	√	√	√	√	X	√	√	√	√	√	X	√	√	√	√	√
CO5	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√

GEOGRAPHYHONOURS/MAJOR(NEP)

Course Outcomes (COs)
Discipline-specific Course: Honours (H – CC)

CC 3: GEOTECTONICS
(Credits: 04; Theory-03, Practical: 01)

Course Learning Outcome (CLOs):

The students will acquire knowledge about-

CO1: Relative and absolute dating of rocks.

CO2: Geological time scale focusing the events of Pleistocene.

CO3: Formation and structural differentiation of the earth.

CO4: Concept of Isostasy with important models and applicability as well as the theory of Plate Tectonics with processes and landforms at plate margins along with the characteristics and origin of major relief features of the ocean floor and concept of hotspots.

CO5: Genetic classification of mountains and types of volcanic eruptions.

CO6: Formation and classification of Folds and Faults.

CO7: Morphometric indices of tectonic activity like

i) Basin asymmetry factor,

    ii) Transverse topographic symmetry factor,

    iii) Mountain front sinuosity

CO8: In the Laboratory course, students will gather first-hand practical knowledge about-

    i)   How to measure dip and strike by using clinometer
    ii)   Megascopic identification of minerals and rocks
    iii)   Analysis of tectonic activity from Survey of India 1:50,000 topographical map focusing

- Basin asymmetry factor
- Transverse topographic symmetry factor.

    iv)   Interpretation of geological maps with

- Uniclinal structure,
- Folds,
- Unconformity,
- Intrusions.

GEOGRAPHYHONOURS/MAJOR(NEP)

PO-CO Mapping

Course Code: CC 3

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13	PO14	PO 15	PO 16
CO1	√	√	×	×	×	√	√	×	√	√	√	×	√	×	×	√
CO2	√	×	×	×	×	√	×	√	×	√	×	√	√	×	×	√
CO3	√	√	√	√	×	×	×	√	√	√	×	√	×	×	×	√
CO4	√	√	√	√	×	√	√	√	√	√	√	×	×	√	√	√
CO5	√	√	√	√	×	√	√	√	√	√	×	×	√	√	√	√
CO6	√	√	√	√	×	√	√	√	√	√	×	×	√	×	√	√
CO7	√	√	√	√	×	√	√	√	√	√	√	×	×	√	×	×
CO8	√	√	√	√	√	√	√	√	√	√	√	√	×	√	√	√

Course Outcomes (COs)
Discipline-specific Course: Honours (H – CC)

CC 4: ECONOMIC GEOGRAPHY
(Credits: 04; Theory-03, Practical: 01)

Course Learning Outcome (CLOs):

Students will

CO 1: Revise the different approaches of Economic Geography and its scope.

CO 2: Acquire knowledge about different economic aspects like goods and services, production, exchange and consumption as well as economic man.

CO 3: Develop concepts about different economic activities like primary, secondary, tertiary, quaternary and quinary.

CO 4: Understand the theories of favourable locational approaches in special reference to Agriculture (after Von Thünen) and industry (after Weber).

CO 5: Learn in detail about different primary activities like agriculture, forestry, fishing, and mining.

CO 6: Learn in detail about different Secondary activities in special reference withclassification of manufacturing industries, special economic zones, and technology parks as well as Tertiary activities like transport, trade and services.

CO 7: Develop understanding in contemporary issues and concept about economic globalization.

CO 8: Acquire knowledge about international trade, role of WTO

CO 9: Enhance knowledge about the emergence and significance of economic blocs in special reference to BRICS

CO10: In Laboratory Course,

Students will

- Learn how to represent gender-wise work participation rate by using bar graph and its interpretation.
- Learn how to construct proportional divided circles to show state-wise variation in occupational structure and its interpretation.
- Prepare crop calendar and its interpretation.
- Develop concept of Time series analysis and its representation in Industrial production of India by moving average.

GEOGRAPHYHONOURS/MAJOR(NEP)

COs-POs Mapping

Course Code: CC 4

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13	PO14	PO 15	PO 16
CO1	√	√	√	√	X	√	√	√	√	√	√	X	√	√	√	√
CO2	√	√	√	√	X	√	√	√	√	√	√	X	√	√	√	√
CO3	√	√	√	√	X	√	√	√	√	√	√	X	√	√	√	√
CO4	√	√	X	X	X	X	X	√	√	√	X	√	√	√	X	X
CO5	√	√	√	√	X	√	√	√	√	√	√	√	√	√	√	√
CO6	√	√	√	√	X	√	√	√	√	√	√	√	√	√	√	√
CO7	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
CO8	√	√	√	√	X	√	√	√	√	√	√	X	√	√	√	√
CO9	√	√	√	√	X	√	√	√	√	√	√	√	√	√	√	√
CO10	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√

Course Outcomes (COs)
Skill Enhancement Course (SEC)

GEOH-SEC-01: METHODS IN GEOGRAPHY
(Credits:04)

Course Learning Outcome (CLOs):

After completion of the course, the students will have ability to:-

CO 1: Design primary survey with clear concept about sampling types and strategy on diverse research problems, prepare questionnaire and interview schedule as well as gain proper knowledge about pilot survey and its relevance.

CO 2: Data compilation into master table with special regard to computer assisted field data entry as well as data tabulation into frequency distribution tables coupled with cognizance about statistical analysis of data focusing measures of central tendency and dispersion.

CO 3: Use minor survey instruments like Brunton Compass, Distometer and Smartphone levelling applications with accurate skill and will also be able to analyze the texture of grains by using sieves following proper process.

CO 4: Collect skill to prepare maps and extract flooded areas from satellite images and digital elevation models.

CO 5: Secure comprehensible knowledge with special reference to methods of preparing maps about areal and linear extents of river bank and coastline shift from Survey of India1:50,000topographicalmap.

CO 6: Accumulate sufficient knowledge regarding important methods in Human Geography like,

       i) Dominant and Distinctive functions to analyze functional structure,

       ii) Ternary diagram to understand occupational patterns,

       iii) Preparation of Accessibility map to study the attainability scenario,

       iv) Preparation of Flow charts to define transportation situation as related with accessibility status.

GEOGRAPHYHONOURS/MAJOR(NEP)

COs-POs Mapping

Course Code: SEC 1

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13	PO14	PO 15	PO 16
CO1	√	√	√	√	X	√	√	√	√	√	√	√	√	√	√	√
CO2	√	√	√	√	√	√	√	√	√	√	√	X	X	√	√	X
CO3	√	√	√	√	√	√	√	√	√	√	√	√	X	√	√	√
CO4	√	√	√	√	√	√	√	√	√	√	√	√	X	√	√	√
CO5	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
CO6	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	X

Course Outcomes (COs)
Skill Enhancement Course (SECB.Sc Major))

GEOH-SEC: ARTIFICIAL INTELLIGENCE
(Credits:04, Theory: 04)

Course Learning Outcome (CLOs):

Students will be able to

CO 1: Define and explain the fundamental concepts of **Artificial Intelligence (AI)** as well as can differentiate AI from human intelligence.

CO 2: Understand the typology of Machine Learning like supervised, unsupervised and reinforcement learning as well as deep learning and neutral network.

CO 3: Learn about Natural language processing (NPL) and computer version.

CO 4: Identify real-world applications of AI in various fields like in healthcare, finance, transportation, customer services and chatbots, education.

CO 5: Analyze the

    i)   Ethical implication like bias and fairness in AI system,

    ii)   Social implications of AI in privacy and data protection concerns

    iii)   And Economic implications of AI on employment and the workforce which can again enhance social inequality.

CO 6: Recognize the potential of AI by implementing and monitoring ethical guidelines and responsible AI practices.

CO 7: Understand the potential of AI to drive innovation and transformation in different domains like generative models and artistic applications.

GEOGRAPHYHONOURS/MAJOR(NEP)

COs-POs Mapping

Course Code: SEC: Artificial Intelligence

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13	PO14	PO15	PO16
CO1	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
CO2	√	√	√	√	√	√	√	√	√	√	√	X	X	√	√	X
CO3	√	√	√	√	X	√	√	√	√	√	√	X	X	√	√	X
CO4	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
CO5	√	√	√	√	X	√	√	√	√	√	√	X	X	√	√	√
CO6	√	√	√	√	√	√	√	√	√	√	√	X	X	√	√	X
CO7	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	X

Course Outcomes (COs)
Skill Enhancement Course (SEC B.A Major))

GEOH-SEC: DIGITAL EMPOWERMENT
(Credits:04, Theory: 04)

Course Learning Outcome (CLOs):

After going through this course, the students will secure knowledge about-

CO 1: Basic concept of Digital Literacy and Digital Empowerment.

CO 2: Enhancement of online communication and collaboration skills.

CO 3: Promoting digital citizenship and responsible online behaviour.

CO 4: Ethical considerations in the use of digital technologies.

CO 5: Gaining awareness of digital security risks and implementation of best practices.

CO 6: Skills to communicate and collaborate in cyberspace using social platforms, teaching – learning tools etc.

CO 7: Importance of security and privacy in the digital world and significance of ethical considerations in the cyber world.

CO 8: Skill of using ICT and digital services along with relevant exploration of emerging technologies in daily life.

GEOGRAPHYHONOURS/MAJOR(NEP)

COs-POs Mapping

Course Code: SEC: Digital Empowerment

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13	PO14	PO 15	PO 16
CO1	×	√	√	√	√	√	√	√	√	√	√	×	×	√	×	√
CO2	×	√	√	√	√	√	√	√	√	√	√	×	×	√	√	×
CO3	×	√	√	√	√	√	√	√	√	√	√	×	×	√	√	×
CO4	×	√	×	×	×	×	√	√	√	×	×	×	×	√	√	×
CO5	×	√	√	√	√	√	√	√	√	√	√	×	×	√	√	×
CO6	×	√	√	√	√	√	√	√	√	√	√	×	×	√	√	×
CO7	×	√	√	√	√	√	√	√	√	√	√	×	×	√	√	×
CO8	×	√	√	√	√	√	√	√	√	√	√	×	×	√	√	×

Course Outcomes (COs)
Skill Enhancement Course

GEOH- SEC-02: Environmental Impact Assessment and Environmental Management Planning
(Credits:04, Theory: 04)

Course Learning Outcome (CLOs):

Students will

CO 1: Learn definition and scope of Environmental Impact Assessment (EIA) and Environmental Management Planning (EMP).

CO 2: Acquire knowledge about policy framework for environmental management and legal framework in special reference to Environmental Protection Act and its implementation to protect Air, Water and Forest.

CO 3: Know about the structure of governance and its implementation strategies.

CO 4: Acquire knowledge about concepts and objectives of Environmental Appraisal.

CO 5: Know how to conduct EIA in stages by using Environmental Information System (EIS).

CO 6: Know how to prepare inventory and matrices of EIA.

CO 7: Understand the methodology for EIA like Impact assessment, risk assessment and cost - benefit analysis.

CO 8: Acquire knowledge about the stakeholder's participation in collaboration among local bodies, citizens, relevant experts.

CO 9: Learn the methods of prediction scenarios, how to mitigate it and assessing its alternatives.

CO 10: Develop their cognition about reporting Environmental Impact.

CO 11: Learn how to monitor EI and review it as well as understand the relevance of Environmental audit and its process.

CO 12: Thoroughly learn about two case studies on EIA & EMP

    i)   Metro rail project and

    ii)   Highway project.

COs-POs Mapping

Course Code: SEC-2

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13	PO14	PO 15	PO16
CO1	√	√	√	√	X	√	√	√	√	√	√	√	√	√	√	√
CO2	√	√	√	√	X	√	√	√	√	√	√	√	√	√	√	√
CO3	√	√	√	√	X	√	√	√	√	√	√	X	√	√	X	√
CO4	√	√	√	√	X	√	√	√	√	√	√	√	√	√	√	√
CO5	√	√	√	√	X	√	√	√	√	√	√	√	√	√	√	√
CO6	√	√	√	√	X	√	√	√	√	√	√	√	√	√	√	X
CO7	√	√	√	√	X	√	√	√	√	√	√	√	√	√	√	X
CO8	√	√	√	√	X	√	**X**	√	√	√	√	√	√	√	√	√
CO9	√	√	√	√	X	√	√	√	√	√	√	√	√	√	√	√
CO10	√	√	√	√	X	√	√	√	√	√	√	√	√	√	√	√
CO11	√	√	√	√	X	√	√	√	√	√	√	√	√	√	√	√
CO12	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√

GEOGRAPHYHONOURS/MAJOR(NEP)

Course Outcomes (COs)
Skill Enhancement Course

GEO-H-IDC-01: Geomatics and Spatial Analysis

(Credits: 03; Theory-02, Practical: 1)

Course Learning Outcome (CLOs):

This course will enable the student to:-

CO 1: Understand the basic concepts of Cartography, Surveying, Remote Sensing (RS), Geographical Information System (GIS) and Global Navigation Satellite System (GNSS) with their diverse applications in geographical studies.

CO 2: Study the definition, concept, components, classification and application of Scales, Maps, and Projections with special emphasis on properties and uses of simple conical projection and Universal Transverse Mercator (UTM).

CO 3: Learn about the different types of Bearing and the concept of geoid and spheroid withspecialreferencetoWGS-84.

CO 4: Procure the basic concepts of three survey instruments, their features and uses: Dumpy level, Theodolite and lastly, Total Station which is the most updated survey instrument.

CO 5: Obtain fundamental concept about Global Navigation Satellite System (GNSS).

CO 6: Discuss about the definition and principles of Remote Sensing which includes mainly the satellites and sensorswithspecialreferencetospacemissionsundertakenbyIndianSpace Research Organization (IRS) and National Aeronautics and Space Administration in U.S.A(Landsat missions).

CO 7: Develop the skill to understand and interpret the standard false colour composition of satellite images (FCC).

CO 8: Acquire basic knowledge about the principles and significance of supervised image classification.

CO 9: Differentiate between various GIS data structures like spatial and non-spatial, raster and vector with emphasis on metadata.

CO 10: Achieve true knowledge about the basic principles of preparing an attribute table, data manipulation, query operation and overlay analysis in GIS.

CO 11: In laboratory course they can apply specific techniques of cartograms like:-

i) Construction of simple conical projection with one standard parallel,

ii) Traverse survey and plotting UTM coordinates using selected smart phone GNSS application,

iii) Identification of landuse/landcover features from satellite imagery and preparation of inventories,

iv) Detection of change (in area & perimeter) of river bank or coastline shift from multi-dated maps and images.

GEOGRAPHYHONOURS/MAJOR(NEP)

COs-POs Mapping

Course Code: IDC - 01

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13	PO14	PO 15	PO 16
CO1	√	√	√	√	√	√	√	√	√	√	√	√	X	√	√	X
CO2	√	√	√	√	√	√	√	√	√	√	√	√	X	√	√	X
CO3	√	√	√	√	√	√	√	√	√	√	√	√	X	√	√	X
CO4	√	√	√	√	√	√	√	√	√	√	√	√	X	√	√	X
CO5	√	√	√	√	√	√	√	√	√	√	√	√	X	√	√	X
CO6	√	√	√	√	√	√	√	√	√	√	√	√	X	√	√	X
CO7	√	√	√	√	√	√	√	√	√	√	√	√	X	√	√	X
CO8	√	√	√	√	√	√	√	√	√	√	√	√	X	√	√	X
CO9	√	√	√	√	√	√	√	√	√	√	√	√	X	√	√	X
CO10	√	√	√	√	√	√	√	√	√	√	√	√	X	√	√	X
CO11	√	√	√	√	√	√	√	√	√	√	√	√	X	√	√	X