Diploma Programme subject outline—Group 3: Individuals and Societies						
School name	Ela Green School		School code 060876			
Name of the DP subject	Digital Society					
(indicate language)						
Level (indicate with X)	Higher XI/XII Standard completed in two years 2 Standard completed in one year *					
Name of the teacher who completed this outline	Ms. Jhuma Panigrahi	Date of IB training	November 2022			
Date when outline was completed	1/dec	Name of workshop (indicate name of subject and workshop category)	Online Digital Society Category	y 1		

1. Course outline

- Use the following table to organize the topics to be taught in the course. If you need to include topics that cover other requirements you must teach (for example, national syllabus), make sure that you do so in an integrated way, but also differentiate them using italics. Add as many rows as you need.
- This document should not be a day-by-day accounting of each unit. It is an outline showing how you will distribute the topics and the time to ensure that students are prepared to comply with the requirements of the subject.
- This outline should show how you will develop the teaching of the subject. It should reflect the individual nature of the course in your classroom and should not just be a "copy and paste" from the subject guide.
- If you will teach both higher and standard level, make sure that this is clearly identified in your outline

^{*} All Diploma Programme courses are designed as two-year learning experiences. However, up to two standard level subjects, excluding languages ab initio and pilot subjects, can be completed in one year, according to conditions established in the *Handbook of procedures for the Diploma Programme*.

Year	Topic/unit (as identified in the IB subject guide)	Contents / Concepts	Allotted Time Each Class 45 Minutes 6 Sessions a week SL-4 sessions HL-2 sessions	Assessment Instruments	Resources
Year 1	Topic 1: What is	SL Content	Total 45 Haves (4 week	Formative Tasks:	https://riseofnations.fandom.com/
	digital society?	 1.1 Digital Society has multiple names 	Total- 15 Hours (4-week	 Research task on History of 	wiki/Information Age/History
July		 1.2 Digital society is characterized by 	approx.)	Information Age	
2023		uneven access to digital systems		Class Discussion on Digital	https://www.techtarget.com/whatis/
		 1.3 Milestones in the development of digital 		Divide (Students will add their	definition/digital-
		society	SL- 10 hrs.	thoughts on a padlet based on	divide#:~:text=The%20digital%20di
		 1.4 Digital systems use binary digits to 	HL-5 hrs.	the research).	vide%20is%20a,personal%20comp
		represent data and information	33	Research Task on How	uters%20and%20internet%20conne

		 1.5 The digital is different from the analogue 1.6 Digitization changes data and information from analogue to digital 1.7 Digitalization is the use of digital systems to change the structure and/or operation of an organization HL Content The challenge and intervention in digital society Overview of HL extensions ATL SKILL Thinking skill Research skill LP Attribute Inquirer Thinkers Concepts - 35 Hours (8 weeks approx.)	SL-3 week HL-1 week -20 hrs. HL-15 hrs. SL-	UNESCO is using digital technology to preserve the records. • Group Discussion on the formats of computer data and how to handle the data. Summative Task: • Chapter Test • Practice Paper 1 • Workshop Task: How to create a compelling inquiry focus • Practice Paper 2 • Workshop: Setting up the digital society journal • Mini Inquiry Project • Introduction to the challenges and interventions in digital society Connection to TOK: How has technology had an impact on collective memory and how knowledge is preserved?	https://www.livescience.com/20718 -computer-history.html https://codesteps.com/2018/08/11/c omputer-concepts-bits-bytes-and- words/ https://techdifferences.com/differe nce-between-analog-and-digital- signal.html https://en.unesco.org/themes/infor mation-preservation/digital- heritage/concept-digital- preservation https://www.forbes.com/sites/sap/2 021/02/23/how-digitalization- creates-value-in-times-of- disruption/?sh=488046f02751
Year 1	Topic 2: Concepts	SL Content:	20 mg. Tie 10 mg. Ge	Summative Assessment:	https://in.video.search.yahoo.com/
August - September 2023	2.1 Change	 Change is the evolution, transformation, adaptation, or movement from one form, state, or value to another Change involves understanding and evaluating people, ideas, objects, and 	3 hrs.	 Chapter Test Practice Paper 1 Practice Paper 2 Mini Inquiry Project 	search/video; ylt=AwrProTMTsBja kESLly7HAx.; ylu=Y29sbwNzZzME cG9zAzEEdnRpZAMEc2VjA3Bpdn M- ?p=what+is+technological+revoluti

		forces that shape the world: past, present,		Formative Assessments:	on&fr2=piv-
		and future.			web&type=E211IN714G0&fr=mcafe
		The nature and importance of change is		changes in the digital society.	e#id=1&vid=0028c3cbccfbd4248d9
		debated.		Group Discussion on the	5defe32d3c7ab&action=view
		Change may indicate continuity or		importance of Change for	
		discontinuity with prior established ways of		society.	https://www.sciencedirect.com/topi
		understanding or doing things.		Group Discussion on "how will	cs/mathematics/technological-
		HL Content - Global Well Being (5.1)		future technologies impact	revolution
		an inquiry to consider an area related to	2 hrs.	employment?"	
		global well-being (e.g., the future of		HL Extended inquiries and	https://study.com/academy/lesson/
		work).		possible interventions.	what-is-a-technological-change-
		5.1 C The Future of work		(Example: - To what extent new	definition-advantages-impact-
		Automation and Employment		jobs that have been created in	examples.html
		Meaningful and secure Employment		the last 5 years involving digital	
		 Addressing the collective needs of 		technologies have impacted	
		workers		meaningful and secure	
				employment?)	
				Connection to TOK: -	
				To what extent is the internet changing	
				what it means to know something?	
	2.2	SL Content:	2 hra	Formative Assessments:	
	Expression	Expression is the act, process, or instance	3 hrs.	Research task on how art plays	https://tech.co/news/artificial-
		of representing ideas, emotions and/or		a key role in expressing thought	intelligence-personalities-2015-
		experiences using different modes and		process	08#:~:text=Here%27s%20my%20ta
		media.		Group discussion on favorite	ke%20on%20it%20all.%20lf%20we
		Expression serves many functions, including		forms of expression in the	%27re,this%20test%20robots%20d
		storytelling, world-building, artistic		digital world.	efinitively%20do%20have%20a%20
		innovation, and political activism.		Digital Story making	personality.
		Expression brings people and communities			
		together while also introducing significant		Connection to CAS: -	https://www.youtube.com/watch?v
		dilemmas.		Create an internal school website that	=8PYX5sQXGXc
				enables students to express	
		HL Content	2 hrs.	themselves.	
		an extended inquiry based on the pre-	5.		
L.					

		release statement of HL Paper-3 • Practice pre-release			
	2.3 Identity	 Identity helps define a person, group, social entity and/or community. Identity is not static but changes over time and according to context and the perspectives of others. Identities are intersectional and may include aspects related to age, nationality, religion, culture, gender, sexuality, race, ethnicity as well as social and economic class. HL Content HL students extend an inquiry to consider an HL topic and area of interest. An HL workshop might also focus on crafting responses to big questions such as those encountered on HL paper 1. 	3 hrs. 2 hrs.	 Research tasks on conflicts happened due to the identity crisis. Group discussion on the role of identity in society. Connection to TOK: - Does the existence of the deep web influence our view on whether some knowledge should remain secret or largely inaccessible? 	08#:~:text=Here%27s%20my%20ta ke%20on%20it%20all.%20lf%20we %27re,this%20test%20robots%20d efinitively%20do%20have%20a%20 personality. https://www.youtube.com/watch?v
September	2.4 power	 SL Content: Power is a feature of all social relations that involves a person's or group's capacity to influence or control the actions of others. Power is structural and embedded within institutions, organizations, and governments. Power is not equally distributed. 	3 hrs.	 Formative Assessments: Group Discussion in the role of Power in society. Group Project on Various models of Power in institutions, organizations, and governments. Summative Assessment: - Exam Paper practice (Paper 1) 	content/uploads/2017/11/Understan ding-your-Online-Identity-An-
		 HL students extend an inquiry to consider an HL topic and area of interest. An HL workshop might also focus on crafting responses to big questions such as those encountered on HL paper 1. 	2 hrs.	Connection to CAS: - Use digital technologies to empower students about school issues through digital surveys.	

	2.5	SL Content:		Formative Assessments:	https://www.bbvaopenmind.com/en
October	Space	Humans organize, construct, and represent		Group Discussion on Online	/articles/inequality-in-the-digital-
		space based on physical, geographic,		space and physical space.	era/
		cultural and/or social features (for example,		PPT on real and virtual spaces	
		into locations, regions, borders, zones).	3 hrs.	you live in based on new	
		Different spaces often serve distinct		considerations and ideas.	https://www.academia.edu/6698510
		functions for people and communities.		Investigate the positive and	2/DIGITAL PUBLIC SPACE FOR
		Access, movement, and flows are significant		negative virtual spaces and	A DIGITAL SOCIETY A REVIEW
		considerations involving space.		submit a report.	OF PUBLIC SPACES IN THE DIG
		Space can be understood using multiple			ITAL AGE
		scales and dimensions, including local,		Summative Assessment: -	
		regional, national, and global as well as		Droporing for concernant	https://www.apc.org/en/blog/inside
		virtual.		Preparing for assessment: Paying the inquiry project.	-digital-society-digital-geopolitics
		HL content:		Revising the inquiry project	
				based on feedbackPreparing for assessment:	
		HL students prepare for HL paper 3 based on their		Mock examinations	
		extended inquiries.	2 hrs.		
				• HL preparing for assessment:	
		ATL Skill		Paper 3	
		Thinking Skill			
		Research Skill			
	2.6	SL Content:	3 hrs.	Formative Assessments:	ttps://www.academia.edu/696559/P
November	Systems	Systems provide one way to think about	51115.	Research task on the role of a	hysical spaces virtual places an
		structure and order in human, natural and		system in society.	d social worlds A study of work
		built environments.		• Produce a system	<u>in the virtual</u>
		 Systems involve sets of interacting, 		diagram/model/map to	
		interdependent and/or interconnected		represent various digital	https://www.jstor.org/stable/434863
		elements.		systems used by our school	<u>78</u>
		Changes within a system of interdependent		and how they interact. Address	
		connections may generate intended and		the issues with using systems in	
		unintended consequences.		your school.	
		Models, maps, and visualizations can help		Research Task to explore the	
		us understand connections within and		Weather system of your area.	
		between systems.		Explore with a real time	
		HL Content- 5.3 Sustainable Development	2 hrs.	example.	
			۷ ۱۱۱۵.	Summative Assessment: -	

		HL students extend an inquiry to consider an area related to sustainable development (e.g., climate change and action). An HL workshop might also focus on identifying and evaluating student-selected intervention. ATL Skill Communication Skill Research Skill	3 hrs.	SL Paper 1 HL Content Activity: - Exam Practice Questions for Paper 1(Section B). Create an elevator pitch on how blockchain technologies can be used to reduce the impact of climate change by tracking and verifying emissions and other activities. Research the effectiveness of home energy monitoring app to inform homeowners about the usage of the energy and automated smart appliances which controls and automates the energy so that the least energy is used. (Interventions) Connection to CAS: - Volunteer to run and maintain some digital technologies that are used by the school and students. Connection to TOK: - To what extent are technologies, such as the microscope and telescope, merely extensions to the human senses, or do they introduce radically new ways of seeing the world?	
	2.7	Values and ethics are ways to determine possible distinctions between right and wrong, fair, and unfair, just, and unjust,		.PPT on Digital Citizenship, Digital and Online etiquette	https://www.kaspersky.com/resource-center/definitions/what-is-a-digital-
November	Values and Ethics	legal, and illegal, proper, and improper.	2 hrs.	Applied ethics App and	

	(Mapping- 3.6A AI)	 Values and ethics guide human action in the world, including individual and group conduct, and decision-making. Values and ethics may be personal, shared, collective and/or professional. Values and ethics are expressed through frameworks, codes, rules, policies, and laws. Values and ethics influence and shape ideas, objects, practices, systems, and spaces. HL content- 5.2 Governance and Human Rights HL students extend an inquiry to consider an area related to governance and human rights (e.g., participation and representation). An HL workshop might also focus on making recommendations for future action. 		for both students and staff members. Summative Assessment: - Exam Practice Questions (Paper 1) Exam Practice Questions (Paper 1-section B)- HL Content Connection to CAS: - Organize and conduct sessions for students and parents about dangers for students on social media and the impact of their digital footprints. Connection to TOK: - How are online or virtual communities like/different from "traditional" communities of knowers?	standards/ethics-and-human-rights http://www.tellagence.com/blog/scien ce/differences-between-communities- and-virtual-communities
	Introd		orox.) SL- 30 hrs. HL- 12 hr		
January 2024	3.1 Data	 SL Content: Data as distinct from information, knowledge, and wisdom Types of data Uses of data Data life cycle 	5 hrs.	 Student Teaching Activity on Types of Data, Representation of Data, Data Security Group discussion on Data bias, anonymity, and surveillance 	Data life cycle https://www.dataworks.ie/5- stages-in-the-data- management-lifecycle- process/ Data Security

		 Ways to collect and organize data Ways of representing data Data security Characteristics and uses of big data and data analytics Data dilemmas HL content 5.3A Climate change and action HL students extend an inquiry to consider an area related to climate change and action. An HL workshop might also focus on making recommendations for future action. ATL Skills: - Thinking skill Research skill 	2 hrs.	Poster making competition on how to be safe online. Summative Assessment: - Exam practice questions (Paper 1) Practice paper 1 (section B) Practice paper 2 Mini IA HL Inquiry: Research and evaluate one intervention for climate change that uses big data. Make a recommendation for steps for future action. Present your work in the form of a written report. Connection to CAS: - Promote screen time awareness among the school community. Share your findings through infographics. Include suitable charts, images, and texts to describe the screen time habits. Connection to TOK: - What is the difference between "data," "information" and "knowledge"?	https://www.microfocus.com /en-us/what-is/data-security Www https://www.techtarget.com/ whatis/definition/World- Wide-Web Big Data https://www.oracle.com/big- data/what-is-big-data/
February	3.2 Algorithm	SL Content:	5hrs	 Game design activities based on simple algorithms. Create flowcharts for a specific problem statement. Use spreadsheets to work on different functions (sort, filter, count etc.) on weather data. 	Algorithm https://www.khanacademy.orgg/computer-gcience/algorithms Dilemmas https://thelondonstory.org/2 021/05/17/algorithmic-

		 5.2 Governance and Human Rights HL students extend an inquiry to consider an area related to 5.1 and 5.2 An HL workshop might also focus on making recommendations for future action. Students will identify and evaluate an intervention. ATL SKILLS Thinking skill Research skill LPA Inquirer 	2 hrs.	 Research task to identify most popular databases and work on prioritization and association algorithms on the database. Summative Task: - Practice paper 1(core) Practice paper 1 (section B) Inquiry Questions Inquiry Focus-HL Topic Connection to CAS: - Use any suitable digital media to create CAS documents. Discuss with the CAS coordinator to implement the same for the class. Connection to TOK: - Can the use of algorithms predict behavioral trails ever be free from human bias. 	Black Box Algorithm https://www.arimetrics.com/en/digi tal-glossary/black-box- algorithm#:~:text=A%20black%20b ox%20algorithm%20is,data%20leak s%20and%20unfair%20competition . Uses of algorithm https://study.com/learn/lesson/algo rithm-methods-uses-examples- what-is-an-algorithm.html
February	3.3 Computers	 SL Content: Types of computers Components of a computer Uses and forms of computer coding Evolution of computing HL content 5.3B Responsible use of resources HL students extend an inquiry to consider an area related to 5.3B. An HL workshop might also focus on claims and perspectives. Students will identify and evaluate a challenge and work on the intervention. 	4 hrs. 2 hrs.	 Formative Tasks: Research Task on Computer Evolution. Analysis of real-world examples Create a spreadsheet to analyze the application software. Create PPT to show machine language and assembly language. Oral presentation to a group of students about MOORE's Law. Present your findings through video and take feedback from 	Evolution of computer https://computerstudypoint.c om/evolution-of- computer/#:~:text=First%20 Generation%20Computer%2 0 Quantum computing https://en.wikipedia.org/wiki/ Quantum_computing Malicious software https://www.techtarget.com/ searchsecurity/definition/mal ware#:~:text=Malware%2C% 20or%20malicious%20softw

		I DA		the friends.	are%2C%20is,Trojan%20hor
		LPA —		Summative Task: -	ses%2C%20ransomware%20
		Reflective		Paper 1(core)	and%20spyware.
				Paper 1(section B)	and 7020Spyware.
		ATL SKILLS		Paper 1(section B) Paper 2	Types of computers
		Communication		·	Types of computers
		Thinking		HL Inquiry Focus: Investigation into the year of	https://www.tutorialspoint.co
		Thinking		Investigation into the uses of	m/basics of computer scie
				quantum computing.	nce/basics of computer sci
					ence_types.htm
				Connection to CAS: -	
				Run a Coding Club *	
				Connection to TOK: -	
				How have the developments in	
				computing helped people process	
				data and information to gain	
				knowledge?	
March 2024	3.4	SL Content:		Formative Tasks:	Identity theft: -
	Networks	Types of computing networks		 Video making task on the 	https://www.investopedia.com/term
		Components of computing networks		history of WWW.	s/i/identitytheft.asp
		Characteristics of computing networks		PPT on the use of each type of	Internet Dilemma
		Computing network providers and services	4 hrs.	network (client-server, P2P) in	https://www.youtube.com/watch?v
		The world wide web		your personal life	<u>=sqvvabeNxIE</u>
		Evolution of the internet and the web		Drawing program to create a	Expansion of the web
		Internet dilemmas		diagram of your home network	https://in.video.search.yahoo.com/
		HL content		using various annotations. Use	search/video; ylt=AwrPpRWUP0Zk
		5.1ALocal and Global Inequalities		network diagrams to correctly	OI8WYIy7HAx.; ylu=Y29sbwNzZzM
				interpret by the peers.	EcG9zAzEEdnRpZAMEc2VjA3Bpd
		HL students extend an inquiry to consider		Create infographics that	nM-
		an area related to 5.1A		include an explanation of the	?p=the+expansion+of+the+web&fr
		An HL workshop might also focus on claims		difference between lossy and	<u>2=piv-</u>
		and perspectives.		lossless compression and how	web&type=E211IN714G0&fr=mcafe
		Students will identify and evaluate a	2 hrs.	a compression algorithm	e#id=3&vid=bd4e0acc24a07f3df342
		challenge and work on the intervention.		works.	63ef51634965&action=view
		LPA —		Prepare a debate on net	Network service providers
				neutrality.	https://www.techtarget.com/search
				Summative Task: -	networking/definition/network-

	Principled		Paper 1	service-provider
	Filicipled		·	<u>service-provider</u>
	ATL SKILLS		Inquiry Focus (3.1i,3.6D)Make Intervention to a digital	
			Human Podcast from 21st	
	Research			
	Thinking		June 2021 for the challenge	
			topic "During the second wave	
			of COVID-2019 in India, the	
			country faced a huge challenge	
			where there was no efficient	
			way to match up available	
			oxygen tanks with patients.".	
			Make a recommendation for	
			steps for future action. Make a	
			written report.	
			Connection to TOK: -	
			What role have networks had in	
			exacerbating unequal access to	
			knowledge?	
3.5	SL Content:		Formative Tasks:	Digital Media
3.5 Digital Media	SL Content: • Types of digital media		Formative Tasks: • Student Teaching Activity on	Digital Media https://www.youtube.com/watch?v=eh
				https://www.youtube.com/watch?v=eh
	Types of digital media		Student Teaching Activity on	https://www.youtube.com/watch?v=eh
	Types of digital mediaCharacteristics of digital media		 Student Teaching Activity on Types of Data, Representation 	https://www.youtube.com/watch?v=eh
	Types of digital mediaCharacteristics of digital mediaImmersive digital media		 Student Teaching Activity on Types of Data, Representation of Data, Data Security. 	https://www.youtube.com/watch?v=eh MRdionquY
	 Types of digital media Characteristics of digital media Immersive digital media Digital media dilemmas 	4 hrs.	 Student Teaching Activity on Types of Data, Representation of Data, Data Security. Reflect on how digital media 	https://www.youtube.com/watch?v=eh MRdionquY Content filtering
	 Types of digital media Characteristics of digital media Immersive digital media Digital media dilemmas HL content 	4 hrs.	 Student Teaching Activity on Types of Data, Representation of Data, Data Security. Reflect on how digital media has influenced your day. 	https://www.youtube.com/watch?v=eh MRdionquY Content filtering https://www.fortinet.com/resources/cy
	 Types of digital media Characteristics of digital media Immersive digital media Digital media dilemmas HL content 5.2A Conflict, peace, and digital Media 5.1C The future of work 	4 hrs.	 Student Teaching Activity on Types of Data, Representation of Data, Data Security. Reflect on how digital media has influenced your day. Make a personal connection 	https://www.youtube.com/watch?v=eh MRdionquY Content filtering https://www.fortinet.com/resources/cy berglossary/content-
	 Types of digital media Characteristics of digital media Immersive digital media Digital media dilemmas HL content 5.2A Conflict, peace, and digital Media 5.1C The future of work HL students extend an inquiry to consider 	4 hrs.	 Student Teaching Activity on Types of Data, Representation of Data, Data Security. Reflect on how digital media has influenced your day. Make a personal connection and find your favorite meme. 	https://www.youtube.com/watch?v=eh MRdionquY Content filtering https://www.fortinet.com/resources/cy berglossary/content- filtering#:~:text=Content%20filtering%
	 Types of digital media Characteristics of digital media Immersive digital media Digital media dilemmas HL content 5.2A Conflict, peace, and digital Media 5.1C The future of work HL students extend an inquiry to consider an area related to 5.2A 	4 hrs.	 Student Teaching Activity on Types of Data, Representation of Data, Data Security. Reflect on how digital media has influenced your day. Make a personal connection and find your favorite meme. Find the genre and create a 	https://www.youtube.com/watch?v=eh MRdionquY Content filtering https://www.fortinet.com/resources/cy berglossary/content- filtering#:~:text=Content%20filtering% 20is%20a%20process,used%20by%2
	 Types of digital media Characteristics of digital media Immersive digital media Digital media dilemmas HL content 5.2A Conflict, peace, and digital Media 5.1C The future of work HL students extend an inquiry to consider an area related to 5.2A An HL workshop might also focus on claims 	4 hrs. 2 Hrs.	 Student Teaching Activity on Types of Data, Representation of Data, Data Security. Reflect on how digital media has influenced your day. Make a personal connection and find your favorite meme. Find the genre and create a report. 	https://www.youtube.com/watch?v=eh MRdionquY Content filtering https://www.fortinet.com/resources/cy berglossary/content- filtering#:~:text=Content%20filtering% 20is%20a%20process,used%20by%2
	 Types of digital media Characteristics of digital media Immersive digital media Digital media dilemmas HL content 5.2A Conflict, peace, and digital Media 5.1C The future of work HL students extend an inquiry to consider an area related to 5.2A An HL workshop might also focus on claims and perspectives. 		 Student Teaching Activity on Types of Data, Representation of Data, Data Security. Reflect on how digital media has influenced your day. Make a personal connection and find your favorite meme. Find the genre and create a report. Make a short deep fake video. 	https://www.youtube.com/watch?v=eh MRdionquY Content filtering https://www.fortinet.com/resources/cy berglossary/content- filtering#:~:text=Content%20filtering% 20is%20a%20process,used%20by%2 Ohome%20computer%20users.
	 Types of digital media Characteristics of digital media Immersive digital media Digital media dilemmas HL content 5.2A Conflict, peace, and digital Media 5.1C The future of work HL students extend an inquiry to consider an area related to 5.2A An HL workshop might also focus on claims and perspectives. Students will identify and evaluate a 		 Student Teaching Activity on Types of Data, Representation of Data, Data Security. Reflect on how digital media has influenced your day. Make a personal connection and find your favorite meme. Find the genre and create a report. Make a short deep fake video. PPT on immersive digital 	https://www.youtube.com/watch?v=eh MRdionquY Content filtering https://www.fortinet.com/resources/cy berglossary/content- filtering#:~:text=Content%20filtering% 20is%20a%20process,used%20by%2 0home%20computer%20users. Digital Media Dilemmas
	 Types of digital media Characteristics of digital media Immersive digital media Digital media dilemmas HL content 5.2A Conflict, peace, and digital Media 5.1C The future of work HL students extend an inquiry to consider an area related to 5.2A An HL workshop might also focus on claims and perspectives. 		 Student Teaching Activity on Types of Data, Representation of Data, Data Security. Reflect on how digital media has influenced your day. Make a personal connection and find your favorite meme. Find the genre and create a report. Make a short deep fake video. PPT on immersive digital Media 	https://www.youtube.com/watch?v=eh MRdionquY Content filtering https://www.fortinet.com/resources/cy berglossary/content- filtering#:~:text=Content%20filtering% 20is%20a%20process,used%20by%2 0home%20computer%20users. Digital Media Dilemmas https://www.bi.edu/research/busine
	 Types of digital media Characteristics of digital media Immersive digital media Digital media dilemmas HL content 5.2A Conflict, peace, and digital Media 5.1C The future of work HL students extend an inquiry to consider an area related to 5.2A An HL workshop might also focus on claims and perspectives. Students will identify and evaluate a 		 Student Teaching Activity on Types of Data, Representation of Data, Data Security. Reflect on how digital media has influenced your day. Make a personal connection and find your favorite meme. Find the genre and create a report. Make a short deep fake video. PPT on immersive digital Media Summative Tasks: - 	https://www.youtube.com/watch?v=eh MRdionquY Content filtering https://www.fortinet.com/resources/cy berglossary/content- filtering#:~:text=Content%20filtering% 20is%20a%20process,used%20by%2 0home%20computer%20users. Digital Media Dilemmas https://www.bi.edu/research/busine ss-review/articles/2020/07/ethical-
	 Types of digital media Characteristics of digital media Immersive digital media Digital media dilemmas HL content 5.2A Conflict, peace, and digital Media 5.1C The future of work HL students extend an inquiry to consider an area related to 5.2A An HL workshop might also focus on claims and perspectives. Students will identify and evaluate a challenge and work on the intervention. ATL Skills		 Student Teaching Activity on Types of Data, Representation of Data, Data Security. Reflect on how digital media has influenced your day. Make a personal connection and find your favorite meme. Find the genre and create a report. Make a short deep fake video. PPT on immersive digital Media Summative Tasks: - Practice Paper 1(core) 	https://www.youtube.com/watch?v=eh MRdionquY Content filtering https://www.fortinet.com/resources/cy berglossary/content- filtering#:~:text=Content%20filtering% 20is%20a%20process,used%20by%2 0home%20computer%20users. Digital Media Dilemmas https://www.bi.edu/research/busine ss-review/articles/2020/07/ethical- dilemmas-of-social-mediaand-
	 Types of digital media Characteristics of digital media Immersive digital media Digital media dilemmas HL content 5.2A Conflict, peace, and digital Media 5.1C The future of work HL students extend an inquiry to consider an area related to 5.2A An HL workshop might also focus on claims and perspectives. Students will identify and evaluate a challenge and work on the intervention. 		 Student Teaching Activity on Types of Data, Representation of Data, Data Security. Reflect on how digital media has influenced your day. Make a personal connection and find your favorite meme. Find the genre and create a report. Make a short deep fake video. PPT on immersive digital Media Summative Tasks: - Practice Paper 1(core) Paper 1 (section B) 	https://www.youtube.com/watch?v=eh MRdionquY Content filtering https://www.fortinet.com/resources/cy berglossary/content- filtering#:~:text=Content%20filtering% 20is%20a%20process,used%20by%2 0home%20computer%20users. Digital Media Dilemmas https://www.bi.edu/research/busine ss-review/articles/2020/07/ethical- dilemmas-of-social-mediaand-

		Self-management		HL extended Inquiry	https://en.wikipedia.org/wiki/Deepf
		LPA: -			ake
		Open-Minded		Connection to TOK: -	
		(Be open to the perspectives, traditions, values of		How does the choice of digital Media	
		others while researching and discussing about		change the way that knowledge is	
		content filtering)		produced, shared, and understood?	
				Connection to CAS: -	
				Create an awareness	
				poster/campaign for students new to	
				the IB about copyright and	
				compliance with academic honesty.	
April 2024	3.6	SL Content:		Formative Tasks:	Digital Media
7 .	Artificial Intelligence	Types of AI		Research task on Evolution of	https://www.copypress.com/
		Types and uses of machine learning		Artificial Intelligence.	kb/content-marketing/digital-
		Uses of artificial neural networks		Group Discussion on	media-definition-and-
		Evolution of AI		Accountability and	examples/
		Al dilemmas		Transparency in Designing	https://thecdm.ca/program/di
		HL content		Artificial Intelligence.	<u>gital-media</u>
		5.1C The future of work		Research on Al legislation	Social Dilemma
				Debate on transparency of AI	https://en.wikipedia.org/wiki/
		HL students extend an inquiry to consider	4 hrs.	algorithms	The Social Dilemma
		an area related to 5.1C		PPT ON neural Network	https://www.youtube.com/wa
		An HL workshop might also focus on claims and parametrizes.		Real life example for each type	tch?v=uaaC57tcci0
		and perspectives.		of machine learning and write a	Evolution of Al
		Students will identify and evaluate a shallenge and work on the intervention.		report to include an	https://www.analyticsinsight.
		challenge and work on the intervention.	2 hrs.	explanation and a discussion	net/the-evolution-of-artificial-
		ATL Skills		with the peers and teacher.	intelligence-past-present-
		Thinking		Summative Tasks: -	<u>future/</u>
		Research		Paper 1 (core)	Neural Network: -
		LPA: -		Paper 2	https://in.video.search.yahoo.com/
		Inquirer		Inquiry Focus	search/video; ylt=Awrx.eJXTEZkA
				Challenge and intervention	X0XM5W7HAx.;_ylu=Y29sbwNzZz
				on a topic related to the HL	MEcG9zAzEEdnRpZAMEc2VjA3Bp
				content.	dnM-?p=neural+network&fr2=piv-
					web&type=E211IN714G0&fr=mcafe

				Connection to CAS: - Teach yourself more about Al opting for an online course. Work through the required activities and document the journey for CAS. Connection to TOK: - What do the developments in Al mean for knowledge?	e#id=2&vid=281ff22245784f5b202b b72b57af22f5&action=view Book: - Digital Dilemmas Exploring Social Media Ethics in Organizations By Øyvind Kvalnes Types of Al https://robots.ieee.org/learn/t ypes-of-robots/ https://www.youtube.com/wa tch?v=gnVMJ0VCmX0
April 2024	3.7 Robots and Autonomous Technologies	SL Content: Types of robots and autonomous technologies Characteristics of robots and autonomous technologies Evolution of robots and autonomous technologies Robots and autonomous technology dilemmas HL content 5.1B Changing population HL students extend an inquiry to consider an area related to 5.1B An HL workshop might also focus on claims and perspectives. Students will identify and evaluate a challenge and work on the intervention. ATL Skills Thinking Research LPA: - Principled	4 hrs. 2 hrs.	 Formative Tasks: Research the use of robots in a context of your choice. Research Task on Complexity of human and environmental interactions. PPT on types of robots Research the growth of IoT in different markets. Hold a discussion on the issue and questions regarding robot rights. Survey to investigate the uncanny valley. Summative Tasks: - Practice Paper 1(Core) Practice Paper 2(section A) Inquiry Focus Challenge and intervention to the topic "challenge of an aging population" and evaluate the use of social robots as one intervention to the challenge. 	r?q=Robots+and+autonomous+tec h+dilemmas&hl=en&as sdt=0&as vis=1&oi=scholart Evolution of robots: - https://ieeexplore.ieee.org/abstract/ document/4141037/ Types of robots: - https://www.intel.in/content/www/in /en/robotics/types-and- applications.html#:~:text=The%20s ix%20most%20common%20types,e nhance%20experiences%20across %20many%20industries. Uncanny valley https://www.techtarget.com/whatis/ definition/uncanny- valley#:~:text=The%20uncanny%20 valley%20is%20a,are%20not%20qu

				Make recommendations for steps in future action. Connection to CAS: - Take charge of Robotics class happening in the school. Keep track of records of students' activities, curriculum and take one session in a month. Connection to TOK: - How can a robot be programmed when two ethical principles contradict each other?	r?q=robots+and+human+interactio n&hl=en&as_sdt=0&as_vis=1&oi=s cholart
May/June	May-Revision/Exams,	June- Summer Break Contents- 28 Hours (6 Weeks) SL-4	weeks HL-2 weeks SL-	16 hrs. HL- 12 hrs.	
Year 2	4.1	SL Content:		Formative Assessments:	https://www.chitkara.edu.in/
July 2024	Cultural	 Arts, entertainment, and popular culture Home, leisure, and tourism Heritage, customs, and celebrations Subcultures HL content Students extend an inquiry to consider an HL topic and area of interest. A workshop might also focus on crafting responses to big questions such as those encountered on HL paper 1. ATL Skills Communication Research Thinking LPA: - communicators 	3 hrs. 2 hrs.	 Research Task on Various cultures. Write a journal on "pepe the frog" internet meme. PPT on IoT security tips Create a spreadsheet on types and example of VR/AR Research work on "technologies used by dark web" Summative Assessments: - Practice Paper 1 Practice Paper 2 Inquiry Focus Connection to CAS: - Set up a sports tournament at school. Write a proposal and obtain approval 	blogs/the-significant-role-of-art-in-shaping-our-society/#:~:text=Artists%20provide%20creative%2C%20intellectual%20and,happier%20place%20to%20live%20in. • https://globaledge.msu.edu/blog/post/55748/the-importance-of-tourism-on-economies-a • https://hbr.org/2016/07/case-study-should-you-adjust-your-business-model-for-amajor-customer

				from your school. Include details required. Or, organize a cultural event in your school. Connection to TOK: - "How do cultural values and identities shape our approaches to learning, knowledge and value?" "What cultural conflicts can arise as digital tools create global communities?"	
August 2024	4.2 Economic	SL Content: Business Employment and labor Goods, services, and currencies Globalization HL content Students extend an inquiry to consider an area related to global well-being (e.g., the future of work). ATL Skills: Thinking Research	2 hrs.	 Student Presentations on Various Business Models. Research journal on "the impacts of customers' sales tracking tools. Possible examples include loyalty programs." Research and present the technologies that employees would need to be able to access company servers, and to be able to attend company meetings and to handle customers remotely. Summative Assessments: - Inquiry Focus Questions Practice Paper 1(core) Practice Paper 2 Connection to CAS: - Get involved in the school's organic farming community. See how they are using technology and look for ways to optimize or improve their digital 	offshoring, outsourcing. https://scholar.google.co.in/schola r?q=offshoring.outsourcing.reshor ing,inshoring+and+insourcing&hl= en&as sdt=0&as vis=1&oi=schola rt Globalization https://en.wikipedia.org/wiki/Borde rless_selling Cryptocurrency https://en.wikipedia.org/wiki/Crypto currency

				platform.	
August 2024	4.3 Environmental	SL Content: Natural resources and ecosystems Pollution and waste Cities, infrastructures and built environments Agriculture HL content Students extend an inquiry to consider an area related to 5.3 sustainable development (e.g., 5.3A climate change and action). An HL workshop might also focus on identifying and evaluating a student-selected intervention. ATL Skills: - Research communication	2 hrs.	Formative Assessments: Research task on the Ecosystem - Impact of global warming on Ecosystems Research journal on cobalt mining in the DRC PPT on drawbacks and concepts of e-waste cycling. E-waste flyer making Video making on gamification Summative Assessments: - Inquiry questions (topic based) Practice paper 1 Practice paper 2(section B)	 https://www.wallstreetmojo.c om/business-ecosystem/ https://www.undp.org/coron avirus/socio-economic-impact-covid- 19?utm_source=EN&utm_m edium=GSR&utm_content=U S_UNDP_PaidSearch_Brand
September 2024	4.4 Health	SL Content: • Medicine and health • The human body • Mental health HL content 5.2C Diversity and Discriminations • Students conduct an extended inquiry based on the pre-release statement for HL paper 3.	3 hrs. 2 hrs.	 Formative Assessments: Group Discussion on Role of Mental Health to live in a Healthy Society Research Task on fighting global diseases. Visual Presentation that explains step-by-step manner how a doctor working in a rural clinic can access electronic medical records stored centrally at the city hospital. Research Task on assistive digital technologies. Summative Assessments: - Paper 1 (core) 	Mental health https://www.samhsa.gov/mental-health Assistive Digital Technology https://www.understood.org/en/articles/assistive-technology-what-it-is-and-how-it-works Virtual reality for PTDS https://in.video.search.yahoo.com/search/video; ylt=AwrPrD23aEdkA WgDCxK7HAx.; ylu=Y29sbwNzZz MEcG9zAzEEdnRpZAMEc2VjA3BpdnM- ?p=virtual+reality+for+PTSD+treatment&fr2=piv-web&type=E211IN714G0&fr=mcafe

September 2024	4.5 Human knowledge	SL Content: • Learning and education		 Paper 1(section B) Challenge and intervention Topic Mock examination Inquiry Project completion Connection to TOK: - Collect data from a local	e#id=1&vid=2ade2d8dcc319c71692 69187366ac238&action=view Organ Printing https://in.video.search.yahoo.com/ search/video; ylt=Awrx afkaEdka 4CGjS7HAx.; ylu=Y29sbwNzZzME cG9zAzEEdnRpZAMEc2VjA3Bpdn M-?p=ORGAN+PRINTING&fr2=piv- web&type=E211IN714G0&fr=mcafe e#id=1&vid=1aeb1672cb42ff91419e f832b30ad352&action=view • https://habitatbroward.org/blog/ benefits-of-
		 HL content Students prepare for HL paper 3 based on their extended inquiries. ATL Skills 		on the world and how it is directed through personal knowledge. • Reflection on the topic	 %20people%20become%20be tter,rights%2C%20laws%2C% 20and%20regulations https://www.kcl.ac.uk/study-
		CommunicationThinking	2 hrs. 1 hr.	Research Task on advantages and disadvantages of remote learning for students Summative Assessments:	legacy/assets/pdf/offer- holders/undergraduate/law/ppl- comparing-political- systems pdf
				 Summative Assessments: - Practice Paper1 Paper 2 Inquiry Focus Connection to TOK: - Who should own the knowledge that was created using taxpayer's money and 	systems.pdf

				community resources.	
October 2024	4.6	SL Content:		Formative Assessments:	Conflict and war
	Political	Political processes		 Group Project in Political 	https://www.britannica.com/browse
		 Governing bodies 		Systems of Various Countries,	/Wars-Battles-Conflicts
		Conflicts and war		major differences in Laws,	Digital Warfare
		 Laws, regulations, and policies 		Regulations and Policies	https://www.techtarget.com/search
		HL content		 Create an ocean model for 	security/definition/cyberwarfare#:~
		 inquiry to consider an area related to 5.2 		your personality traits.	:text=The%20generally%20accepte
		governance and human rights	2 hrs.	 Explore govt information 	d%20definition%20of,to%20the%20
		 A workshop might also focus on making 		websites	loss%20of%20life.
		recommendations for future action		 Visual presentation on 	Ransomware
		ATL Skills: -		ransomware and terrorism.	https://www.trendmicro.com/vinfo/
		Communication		 Short video on cyber crime 	us/security/definition/ransomware
		Research		Summative Assessments: -	Biometric passport
				Paper 1	https://en.wikipedia.org/wiki/Biome
			2 hrs.	Paper 2	tric passport
				Inquiry focus	
				 HL challenge topic and 	
				intervention	
				Connection to TOK: -	
				How can we determine the difference	
				between propaganda, information,	
				misinformation, and fake news?	
November 2024	4.7	SL Content:		Formative Assessments:	Predictive policing
	Social	Social components of identity		 Group Discussion on the role 	https://en.wikipedia.org/wiki/Predictive
		Social class		of a family system in society.	_policing#:~:text=By%20having%20p
		Families and relationships		 Research on demographic 	olice%20use%20information,to%20id
		HL content	2 hrs.	segmentation has had an	entify%20locations%20of%20shootin
		 Inquiry to consider an area related to 5.1 		impact on the design, analysis,	<u>gs</u> .
		global well-being		and use of survey data.	Digital Redlining
			1 hr.	 Research On Immersive 	https://in.video.search.yahoo.com/sea
				Reader Technology.	rch/video; ylt=AwrKAQ2kb0dkSp8Dt
				 Design and conduct a survey 	Eq7HAx.; ylu=Y29sbwNzZzMEcG9z
				for online community your	AzEEdnRpZAMEc2VjA3BpdnM-
				friends and family belong to	?p=digital+redlining&fr2=piv-

				Summative Assessments: -	web&type=E211IN714G0&fr=mcafee
				Paper 1	#id=1&vid=0477796d4e426e5f8ae4e
				Paper 2	d59a4257ce6&action=view
				Inquiry Focus	Race and ethnicity
				Challenges and interventions	https://www.nationalgeographic.com/c
				topic	ulture/article/race-ethnicity
				Connection to TOK: -	
				"Computer simulations and games	
				are models of the real world. To what	
				extent are they close to the real	
				world? When meeting people online,	
				what evidence can they provide to	
				prove to you that they are who they	
				are?"	
				Connection to CAS: -	
				Hold a Minecraft build battle	
				competition for your school	
				community.	
January /Feb/March	Topic 5	Local and global inequalities			
2025	HL	Changing populations	15 Hrs.		
	Prerelease	The future of work			
	Statement	Conflict, peace, and security			
		Participation and representation	15 Hrs.		
		Diversity and discrimination			
		Climate change and action			
		Responsible use of resources	15 Hrs.		
		Managing pollution and waste			
April 2025	All Topics		Revision		
May 2025			Assessments		
June 2025			Summer Break	/DP Ends	

		Jı	uly 2023		August 2023			
	Week 1	Week 2	Week 3	Week 4	Week 1	Week 2	Week 3	Week 4
SL Content	Introduction to Digital Society	Introduction to Digital Society	Topic 1	Topic 1	Topic 2.1	Topic 2.1	Topic 2.2	Topic 2.2
HL Content								
Exams								Introduction to Paper 1
	September 2023				October 202	23		
	Week 1	Week 2	Week 3	Week 4	Week 1	Week 2	Week 3	Week 4
SL Content	Topic 2.3	Topic 2.3	Topic 2.4	Topic 2.4	Topic 2.5	Topic 2.5		
HL Content								
Exams				Practice Paper 1				Practice Paper 1
	November 2023			January 2024				
	Week 1	Week 2	Week 3	Week 4	Week 1	Week 2	Week 3	Week 4
SL Content	Topic 2.6	Topic 2.6	Topic 2.7	Topic 2.7		Topic 3.1	Topic 3.1	Topic 3.1
HL Content								
Exams				Practice Paper 1 Introduction to Paper 2				
Internal Assessment	Introduction to IA							
Extended Essay							Introduction to Extended Essay	
		Febr	ruary 2024			Marc	h 2024	
	Week 1	Week 2	Week 3	Week 4	Week 1	Week 2	Week 3	Week 4
SL Content	Topic 3.2	Topic 3.2	Topic 3.3	Topic 3.3	Topic 3.4	Topic 3.4	Topic 3.5	Topic 3.5
HL Content								
Exams				Practice Paper 1 Practice Paper 2				Practice Paper 1 Practice Paper 2
Internal Assessment				Submission Inquiry Focus – Criterion A				

Extended Essay						First Reflection Meeting		Finalizing the Research Question and Methodology
		A	pril 2024		May 2024			
	Week 1	Week 2	Week 3	Week 4	Week 1	Week 2	Week 3	Week 4
SL Content	Topic 3.6	Topic 3.6	Topic 3.7	Topic 3.7				
HL Content								
Exams				Practice Paper 1 Practice Paper 2				
Internal Assessment				Submission Inquiry Focus – Criterion B				
Extended Essay								
	July 2024				Augus	st 2024		
	Week 1	Week 2	Week 3	Week 4	Week 1	Week 2	Week 3	Week 4
SL Content	Revision of Y1	Revision of Year 1	Topic 4.1	Topic 4.1	Topic 4.2	Topic 4.2	Topic 4.3	Topic 4.3
HL Content								
Exams								
Internal Assessment								Submission Inquiry Focus – Criterion C
Extended Essay				Completion of Experiments				First Draft Submission
		Sept	ember 2024			Octob	er 2024	
	Week 1	Week 2	Week 3	Week 4	Week 1	Week 2	Week 3	Week 4
SL Content	Topic 4.4	Topic 4.4	Topic 4.5	Topic 4.5	Topic 4.6	Topic 4.6		
HL Content								
Exams				Practice Paper 1 Practice Paper 2				
Internal Assessment							Submission Inquiry Focus – Criterion D	
Extended Essay		Second Reflection Meeting		Completion of Primary and Secondary Research				

					Dec 2024			
			ov 2024		Wooled Wooled Wooled			
	Week 1	Week 2	Week 3	Week 4	Week 1	Week 2	Week 3	Week 4
SL Content	Topic 4.7	Topic 4.7						
HL Content								
Exams				Practice Paper 1 Practice Paper 2				
Internal Assessment						Submission Inquiry Focus – Criterion E		
Extended Essay								Final Draft Submission
	Jan 2025				Feb 2025			
	Week 1	Week 2	Week 3	Week 4	Week 1	Week 2	Week 3	Week 4
SL Content	Revision	Revision	Revision	Revision	Revision	Revision	Revision	Revision
HL Content	Revision	Revision	Revision	Revision		Pre-Release To	ext Discussion	
Exams				Practice Paper 1 Practice Paper 2	Paper 3 Introduction	Paper 3 Practice	Paper 3 Practice	Paper 3 Practice
Internal Assessment				Final Draft Submission				
Extended Essay						Viva- Voce		
		Ма	arch 2025			April	2025	
	Week 1	Week 2	Week 3	Week 4	Week 1	Week 2	Week 3	Week 4
SL Content	Revision	Revision	Revision	Revision	Revision	Revision	Revision	Revision
HL Content		Pre-Release	e Text Discussion			Pre-Release To	ext Discussion	
Exams	Paper 3 Practice	Paper 3 Practice	Paper 3 Practice	Paper 3 Practice	Mock Tests	Mock Tests	Mock Tests	Mock Tests
Internal Assessment	First Draft Submission			Final Submission				

Links to TOK

You are expected to explore links between the topics of your subject and TOK. As an example of how you would do this, choose one topic from your course outline that would allow your students to make

links with TOK. Describe how you would plan the lesson.

Topic	Link with TOK (including description of lesson plan)
Topic 1: What is digital society?	 To what extent understanding the knowledge will help the digitization process simple. To what extent digitization leads to advancement in education, business, and organization. How do online and virtual communities differ from face-to-face communities?
Topic 3.1: - Data	 4. How are data, information, knowledge, and wisdom like, and different from, one another? 5. How do digital systems extend or transform different modes of human cognition and communication? 6. What are some ways that digital systems change our understanding of originality, authorship, creativity, audiences, and consumption?

6. Approaches to learning

Every IB course should contribute to the development of students' approaches to learning skills. As an example of how you would do this, choose one topic from your outline that would allow your students to specifically develop one or more of these skill categories (thinking, communication, social, self-management, or research).

Topic	Contribution to the development of students' approaches to learning skills (including one or more skill category)
	Thinking skills - students should constantly be reflecting on their learning, this can be through journaling or concluding at the end of activities and labs. Providing students with opportunities to struggle is productive to developing higher order thinking and giving students open ended problems and allowing them to work through a "productive struggle" allows them to understand how they learn as well as develop problem solving strategies that work for them.
	Self-management skills - in my experience, organizational and affective skills are key to success in any IB course. Students should be encouraged to budget their time both during and after school in order to make sure they can be successful in their course work but also keeping an eye on their physical and mental health. I have always found journaling to be a helpful way for students to "keep tabs" on their mental and physical well-being.
	Research skills - In the Digital Society course, it is important for students to be introduced to sources of reliable and peer-reviewed information. Our class works closely with the local university in order to access data-bases of peer-reviewed research. Students use these resources in their IA, lab work and projects in order to produce products that have been informed by the latest research. Students are taught to disseminate information and learn to identify biases and sources that lack reliability, this provides them with a high level of literacy in evaluating sources of information.

7. International mindedness

Every IB course should contribute to the development of international-mindedness in students. As an example of how you would do this, choose one topic from your outline that would allow your students to analyze it from different cultural perspectives. Briefly explain the reason for your choice and what resources you will use to achieve this goal.

Topic	Contribution to the development of international mindedness (including resources you will use)	
International Mindedness I believe one of the ways is to challenge learners to use the knowledge they obtain from class to solve global problems. Into the delivery of the		
	I also think we can develop international-mindedness if we give collaborative tasks that require learners of different cultures to work together and learn from each other. This sharing can help them appreciate individual differences based on beliefs, norms, and values, which is important for international mindedness.	

8. Development of the IB learner profile

Through the course it is also expected that students will develop the attributes of the IB learner profile. As an example of how you would do this, choose one topic from your course outline, and explain how the contents and related skills would pursue the development of any attribute(s) of the IB learner profile that you will identify.

Topic	Contribution to the development of the attribute(s) of the IB learner profile
	innovative thinkers who strive to understand digital society in new ways
	 resourceful researchers who approach diverse sources of information with insight and imagination
	curious and engaged creators who link practical experiences to their inquiries into digital society
	empathetic collaborators who enrich their learning by working with others, locally and globally
	 critical users who evaluate the impacts and implications of digital systems for people and communities
	principled citizens who act and lead, as guided by ethical values.