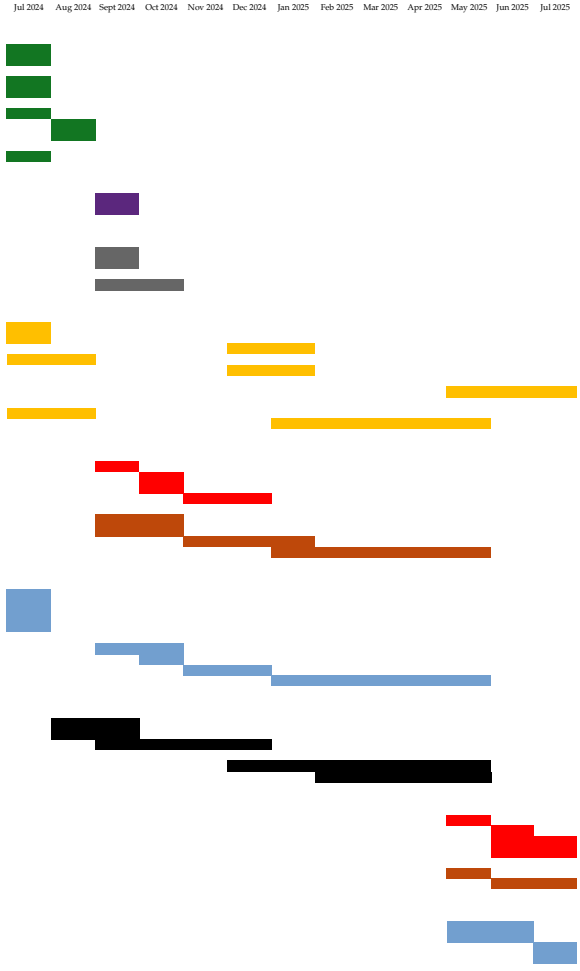
[Open-Source CEM and Additive Manufacturing, Year 1] 15%

[Whittier College]

[Profs. J. Hanson, F. Park, S. Zorba, S. Lagan, G. Piner] **Sunday, December 15, 2024**

[Nayeli Camacho, Shaun Dunnick]

WBS	Task Names	Responsible Colleagues	Start	Net Work Days	Finish	% Complete	Net Work Days	Days Completed	Days Remaining	Days to Deadline
			01-Jul-2024	300	23-Aug-2025	15%	300	45	255	251
	Hardware Acquisition (Weight=10%)	**[Prof. Hanson, N. Camacho, F. Park]**	**01-Jul-2024**	**34**	**15-Aug-2024**	**100%**	**34**	**34**	**0**	**-122**
	3D Printer Acquisition									
	Obtain quotes	[Prof. Hanson]	01-Jul-2024	6	08-Jul-2024	100%	6	6	0	-160
	Complete purchase	[N. Camacho]	10-Jul-2024	4	15-Jul-2024	100%	4	4	0	-153
	3D Printer Filament Acquisition									
	Obtain quotes	[Prof. Hanson]	01-Jul-2024	6	08-Jul-2024	100%	6	6	0	-160
	Complete purchase	[N. Camacho]	10-Jul-2024	4	15-Jul-2024	100%	4	4	0	-153
	GPU/Multicore Server									
	Perform market comparison	[F. Park]	01-Jul-2024	24	01-Aug-2024	100%	24	24	0	-136
	Obtain quotes	[Prof. Hanson]	01-Aug-2024	10	14-Aug-2024	100%	10	10	0	-123
	Complete purchase	[N. Camacho]	14-Aug-2024	2	15-Aug-2024	100%	2	2	0	-122
	RF Lab Hardware									
	RF cables and connectors	[Prof. Hanson]	01-Jul-2024	24	01-Aug-2024	100%	24	24	0	-136
	Recruitment (Weight=5%)	**[Prof. Hanson]**	**23-Aug-2024**	**22**	**23-Sep-2024**	**0%**	**22**	**0**	**22**	**-83**
	Standard undergraduate recruitment procedure									
	Undergraduate STEM researchers	[Prof. Hanson]	23-Aug-2024	22	23-Sep-2024	0%	22	0	22	-83
	Undergraduate app/code designers	[Prof. Hanson]	23-Aug-2024	22	23-Sep-2024	0%	22	0	22	-83
	Run Published CEM Codes (Weight=5%)	**[Prof. Hanson, Undergraduates 1,2]**	**23-Sep-2024**	**12**	**08-Oct-2024**	**0%**	**12**	**0**	**12**	**-68**
	Initial CEM Training, Linux Accts.									
	CEM Training	[Prof. Hanson, Undergraduates 1,2]	23-Sep-2024	6	30-Sep-2024	0%	6	0	6	-76
	Account creation	[Prof. Hanson]	23-Sep-2024	6	30-Sep-2024	0%	6	0	6	-76
	Updating CEM Code									
	Unpack and test original code	[Prof. Hanson]	23-Sep-2024	12	08-Oct-2024	0%	12	0	12	-68
	Course Integrations (Weight=10%)	**[Profs. Hanson, Lagan, Zorba, Piner, and Park]**	**01-Jul-2024**	**300**	**23-Aug-2025**	**0%**	**300**	**0**	**300**	**251**
	Physics Courses									
	Algebra-Based Physics II	[Prof. Hanson]	01-Jul-2024	11	15-Jul-2024	0%	11	0	11	-153
	Calculus-Based Physics II	[Prof. Hanson]	01-Jul-2024	11	15-Jul-2024	0%	11	0	11	-153
	Optics	[Profs. Zorba and Hanson]	15-Dec-2024	23	15-Jan-2025	0%	23	0	23	31
	Electromagnetic Theory	[Prof. Hanson]	01-Jul-2024	40	23-Aug-2024	0%	40	0	40	-114
	Computational Physics	[Profs. Lagan and Hanson]	15-Dec-2024	23	15-Jan-2025	0%	23	0	23	31
	Computer Science Courses									
	Computer Logic and Digital Circuit Design	[Prof. Hanson]	15-May-2025	72	23-Aug-2025	0%	72	0	72	251
	Digital Signal Processing	[Prof. Hanson]	01-Aug-2025	16	23-Aug-2025	0%	16	0	16	251
	Introduction to Data Science with Python	[Profs. Hanson and Piner]	01-Jul-2024	40	23-Aug-2024	0%	40	0	40	-114
	Machine Learning	[Profs. Hanson and Park]	15-Jan-2025	87	15-May-2025	0%	87	0	87	151
	Primary CEM Research, Semesters 1, 2 (Weight=10%)	**[Prof. Hanson, Undergraduates 1,2]**	**23-Aug-2024**	**190**	**15-May-2025**	**50%**	**190**	**95**	**95**	**151**
	CEM Simulations, Data Visualization									
	3D visualization of RF horn design	[Prof. Hanson, Undergraduate 1]	23-Sep-2024	7	01-Oct-2024	100%	7	7	0	-75
	Time-domain computations, phase analysis	[Prof. Hanson, Undergraduate 1]	01-Oct-2024	24	01-Nov-2024	100%	24	24	0	-44
	S-Parameters analysis	[Prof. Hanson, Undergraduate 1]	01-Oct-2024	24	01-Nov-2024	100%	24	24	0	-44
	Inclusion of coaxial cable in simulation	[Prof. Hanson, Undergraduate 1]	01-Nov-2024	31	15-Dec-2024	50%	31	15	16	0
	Machine Learning Optimization									
	Background research for algorithms	[Prof. Hanson, Undergraduate 2]	23-Sep-2024	30	01-Nov-2024	100%	30	30	0	-44
	Learning genetic programming styles	[Prof. Hanson, Undergraduate 2]	23-Sep-2024	30	01-Nov-2024	100%	30	30	0	-44
	CEM implementation with basic RF horn	[Prof. Hanson, Undergraduate 2]	01-Nov-2024	54	15-Jan-2025	25%	54	13	41	31
	RF antenna optimization	[Prof. Hanson, Undergraduate 2]	15-Jan-2025	87	15-May-2025	0%	87	0	87	151
	Additive Manufacturing, Semesters 1, 2 (Weight=10%)	**[S. Dunnick, Prof. Hanson, Undergraduate 3]**	**01-Jul-2024**	**229**	**15-May-2025**	**0%**	**229**	**0**	**229**	**151**
	Printing with PLA Filament									
	Updating prior designs	[S. Dunnick, Prof. Hanson]	01-Jul-2024	40	23-Aug-2024	0%	40	0	40	-114
	Practice file format conversion	[S. Dunnick, Prof. Hanson]	01-Jul-2024	40	23-Aug-2024	0%	40	0	40	-114
	Print test object	[S. Dunnick, Prof. Hanson]	01-Jul-2024	40	23-Aug-2024	0%	40	0	40	-114
	Print PLA antenna model	[S. Dunnick, Prof. Hanson]	01-Jul-2024	40	23-Aug-2024	0%	40	0	40	-114
	Printing with Electrifi Filament									
	Print test object	[S. Dunnick, Undergraduate 3]	23-Sep-2024	17	15-Oct-2024	0%	17	0	17	-61
	Perform resistivity measurements	[S. Dunnick, Undergraduate 3]	15-Oct-2024	14	01-Nov-2024	0%	14	0	14	-44
	Print simple antenna	[S. Dunnick, Undergraduate 3]	01-Nov-2024	31	15-Dec-2024	0%	31	0	31	0
	Print complex antenna	[S. Dunnick, Undergraduate 3]	15-Dec-2024	109	15-May-2025	0%	109	0	109	151
	Application Development, Semesters 1, 2 (Weight=10%)	**[Prof. Hanson, Undergraduate 4]**	**23-Aug-2024**	**190**	**15-May-2025**	**0%**	**190**	**0**	**190**	**151**
	Creating Project Plan with Students									
	Creating kanban taskflow	[Prof. Hanson]	23-Aug-2024	22	23-Sep-2024	0%	22	0	22	-83
	Updating prior code	[Prof. Hanson]	23-Aug-2024	22	23-Sep-2024	0%	22	0	22	-83
	Experimenting with Android SDK	[Undergraduate 4]	23-Sep-2024	60	15-Dec-2024	0%	60	0	60	0
	Designing Visual Environment									
	Updating prior designs	[Undergraduate 4]	15-Dec-2024	109	15-May-2025	0%	109	0	109	151
	Displaying content on Android app	[Undergraduate 4]	01-Feb-2025	74	15-May-2025	0%	74	0	74	151
	Primary CEM Research, Summer 2025 (Weight=20%)	**[Prof. Hanson, Undergraduates 1,2]**	**15-May-2025**	**72**	**23-Aug-2025**	**0%**	**72**	**0**	**72**	**251**
	CEM Simulations, Data Visualization									
	3D visualization of *optimized* antenna	[Prof. Hanson, Undergraduate 1]	15-May-2025	12	01-Jun-2025	0%	12	0	12	168
	S-Parameters in complex media	[Prof. Hanson, Undergraduate 1]	01-Jun-2025	10	15-Jun-2025	0%	10	0	10	182
	CEM for 3D arrays in complex media	[Prof. Hanson, Undergraduate 1]	15-Jun-2025	50	23-Aug-2025	0%	50	0	50	251
	RX/TX with phased arrays in complex media	[Prof. Hanson, Undergraduate 1]	15-Jun-2025	50	23-Aug-2025	0%	50	0	50	251
	Machine Learning Optimization									
	3D visualization of *optimized* antenna	[Prof. Hanson, Undergraduate 2]	15-May-2025	12	01-Jun-2025	0%	12	0	12	168
	Explore HPol array optimizations in ice	[Prof. Hanson, Undergraduate 2]	01-Jun-2025	60	23-Aug-2025	0%	60	0	60	251
	Additive Manufacturing, Summer 2025 (Weight=20%)	**[S. Dunnick, Undergraduates 1,3]**	**15-May-2025**	**72**	**23-Aug-2025**	**0%**	**72**	**0**	**72**	**251**
	Printing with Electrifi Filament									
	Updating prior designs	[S. Dunnick, Undergraduate 3]	15-May-2025	34	01-Jul-2025	0%	34	0	34	198
	Continue printing complex antenna	[S. Dunnick, Undergraduate 3]	15-May-2025	34	01-Jul-2025	0%	34	0	34	198
	Real S-parameter measurement	[Prof. Hanson, Undergraduate 3]	01-Jul-2025	39	23-Aug-2025	0%	39	0	39	251
	Real radiation pattern measurement	[Prof. Hanson, Undergraduate 3]	01-Jul-2025	39	23-Aug-2025	0%	39	0	39	251



Aug 2025