

The University of Montana, Department of Geography, Spring 2020

GPHY 486 Transport, Planning and GIS – 3 credit (CRN 34124)

with co-requisite laboratory GPHY 489-01 1-credit (CRN 34125)

Christiane von Reichert

Place:	Stone Hall 217 and GReaTLab Stone Hall 218		Office:	Stone Hall 210
Time:	MoFr 9-10.20 (class) We 9-10.50 (lab)		Office Hours:	Mo 10.30-11.45 am We 11-11.45 am Fr 10.30-11.45 am and by arrangement
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TA email:	Leon.miller@umconnect.umt.edu		TA Hours:	Mo 2.30-4 pm Th 2.30-4 pm

Co-requisite: GPHY 489:01 Cartography/GIS laboratory 1 cr,

- W 9-10.50 am (Geospatial Research and Teaching) Lab, Stone Hall 218.
- The lab will provide you with hands-on experiences and opportunities to start on assignments.
- However, you should be prepared to spend additional time outside of lab periods to complete lab assignments, and to additionally explore transport-related problems or GIS-T features on your own.
- Please note that some class periods will be used for lab activities – to make for a better ‘flow’ of the content.

Pre-requisites and target audience:

This course is designed for upper-division and graduate students.

- You should have an adequate quantitative background (M 115/Math 117 or higher) or you should be inclined to acquire it outside this course.
- Basic knowledge of Windows operations is assumed.
- GPHY 284 Introduction to GIS and Cartography is helpful, but not required.
- I am asking students with strong quantitative and cartography/GIS backgrounds to cooperate with others to promote success for all in this course.

Readings (overview):

- I selected the readings for this course from a variety of sources, but there is no textbook to purchase.
- Readings consist of chapters from text books, TransCad software manuals, and government reports including web publications.
- TransCad Manuals are built into the software help menu.

- I also put a copy of earlier TransCad Manuals in the GRT Lab Feel free to use it while working on your assignments in the labs. Please do not remove it from the lab.
- TransCad manuals consist of the User's Guide (TCUG), Travel Demand Modeling (TCTDM) manual, and the Routing and Logistics (TCRL) manual.
- Moodle and the server Robinson2016 will be used to provide access to class materials and data. (Moodle – class related, Robinson2016 – lab related.)

Learning outcomes:

Students in this course will

1. Gain an understanding of networks (links and nodes) and their use in GIS-T (here: TransCad)
2. will become aware of TransCad capabilities for **routing and logistics**, including access to services, and locating service facilities. We will put these tools to use to provide helpful analysis for the Montana Food Bank Network MFBN
3. advance their insight into the **patterns and trends in urban passenger transportation**, 4. develop an understanding of the **principles of transport planning and travel demand modeling in GIST**, 5. gain the ability to **employ TransCad**, the leading GIS-T software, to **solve transportation and network problems, and run travel demand models**,
6. and get to know street, socio-demographic and model-derived **data for Missoula, which will be used (and added to) throughout the course.**

Students will additionally

7. improve their skills in **organizing files and managing databases**,
8. and further their experience in **synthesizing** the findings of their model and **presenting** the findings **visually, in speech and in writing.**

Assessment and Grading:

Grading (T)

This course is offered for traditional letter grade (T) only. A letter grade of C- and higher is required for the course to count toward degree requirements or degree electives.

Elements of the grade

Progress in this course will be promoted in a variety of ways, and assessed and graded as follows

- Labs: approx. 60 points
- Final project: 30 points
 - Final project drafts: 5 points (idea- 1pt; draft paper/outline – 2 points, draft digital presentation – 2 points)
 - Final digital presentation: 7 points
 - Final oral presentation: 8 points
 - Final project paper: 10 points
- Attendance, participation: 10 points
- Exams/quizzes: TBD
- Bike-ped count: 1 bonus point per count, early May, exact dates to be determined

Graduate increment

- Digital presentation file: 4 points
- Oral presentation: 5 points
- Paper: 11 points

Grades will be assigned using a +- system as follows:

A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
93.3100	90- 93.3	86.790	83.3- 86.7	80- 83.3	76.780	73.3- 76.7	70- 73.3	66.770	63.3- 67.7	60- 63.3	<60

Attendance and participation in class and lab

You can earn up to 10 points toward your grade through attendance and participation.

- Students are expected to attend all class and lab period, which typically translates into greater ease to complete course assignments. Students with strong attendance generally experience less stress in completing the final project and produce more meaningful projects, making for better learning and outcomes.
- For class and lab combined:
 - **Up two unexcused absences** will not negatively affect your grade – to allow for unexpected events
 - **Up to two excused (and documented)** absences, ie for illness, religious observance, UM sponsored activities, military service, mandatory public service, are allowed without a negative effect on your grade. **Timely notice** is required for excused absences.
 - If military service or public mandatory service leads to absences for class or lab, please communicate with me in advance as early as feasible about anticipated absences.

Assignments

You will complete a series of lab assignment for approximately total 60 points.

- Early, basic lab assignments will introduce you to essential TransCad functions. Several assignments will introduce you to the routing and logistics features of TransCad, useful for determining service areas. (application: Montana Food Bank Network data)
- Most assignments of the course form a sequence for building the 4-step travel demand model TDM using Missoula data.
- Please note that these assignments ‘build on each other’: to move forward, you must have completed the previous assignment. In essence, the assignments are cumulative. Additionally, they can form a considerable part (‘standard model’) of your final project.
- I strongly encourage you to keep up with the work and avoid falling behind. To show your progress, you will submit selected output and/or short write-ups.

Submitting Assignments in Moodle DropBox

- Assignment will be submitted via Moodle dropboxes. The typical time for submission is 8 pm the Tuesday following the Wednesday lab (essentially 1 week) or equivalent if labs are assigned on a different day.
- Given the complexity of the grading system, it would create a considerable burden to keep track of late lab assignments. Please submit lab assignments on the due date, before the Moodle Drop Box closes. **Therefore, no late assignments. However: You can miss one unexcused lab assignment without a negative effect on your grade.**
- **With timely communication and a valid excuse, you may submit late one lab assignment.** Please keep in mind: As you have essentially one week to complete assignments, being unable to submit it on the due date is not a valid excuse.
- Should we encounter an unforeseen and systematic technical problem (ie with TransCad or Moodle) creating difficulty **for the entire class** to meet a deadline, a specific due date will be changed for all.
- Please communicate with me immediately if such technical difficulties should occur.
- Change in due date will be communicated to you via email to your official university email address or in class..

Final project

The final project will account for approximately 30 points.

- consisting of drafts (5 points) a digital presentation file (7 points), and oral presentation (8 points), and a concise paper (2000-3000 words (10 points)
- The intent of the final project is to employ the widely-used four-step transport model for Missoula and modify it above and beyond the lab assignments.
- Examples of modifications: changes to the underlying transport network or to the land use system, changes in methods and parameter, or other modifications, such as pollution effects, bike routes, etc.
- Presentations will be submitted digitally before class of presentation date.
- Papers will be submitted in print and digital form before or immediately after the presentation.

Solo or Team Work

- Throughout the course, you can work solo or in a team of 2 students.
- For teams: Lab assignments must show both names, but be submitted separately, even if identical in content (to better keep track of submitted work).
- Final project presentations may be made as a team, but the papers need to be separate papers.

Exams

- 1 or 2 exams, or several short quizzes may be given throughout the semester, focusing on the conceptual understanding of course content (10 points). No teamwork on exams, of course.

Graduate Increment/s

Graduate students will additionally give a presentation and write a paper.

- The paper will consist of 2500-4000 words; the paper must contain: a properly formatted cover page, a table of content (Tip: use the ToC feature of your word processor), 1.5-2 line spaced text, a short bibliography/list of sources (Tip: use a bibliographic database manager such as the free on-line RefWorks, or similar. I use EndNote.)
- There are two options for the graduate increment paper: a literature review option and an applied methodology option.
 - For the literature review option, students will screen the professional **literature** for theoretical discussions and empirical findings on mode split (or another topic related to the course and of interest to you), or review an agency report or sections of a text.
 - Alternatively, the graduate increment can be have a **methodological** and applied focus by exploring a TransCad feature not dealt with (or only briefly discussed) in class.
- Suggested date for paper and presentation are April 6 or April 24 (TBD)
- The final project of graduate students is expected to be more challenging and employ more sophisticated procedures than the projects of undergraduate students.

Schedule:

At the end of this syllabus is a schedule of topics, including a list of readings and due dates.

- I have invited several guest speakers from the public, and the private sectors.
- As I will build some completely new labs (related to MFBN) into the course, some labs are shown to be tentative, depending on the flow of the course.
- (However, we need to reach the Traffic Assignment stage as the final step of the Travel Demand Model.)
- Changes to the schedule may be made, and these changes will be announced in class.

Logistics: Moodle-, Communication, Work-, Lab-Related:

Course Materials (Moodle, Server)

- In my lectures, I will use PowerPoint presentations. I plan to post the presentations either shortly before class or soon after class on Moodle. Posting on Moodle can be quite slow but I will do my best to give you access to course materials 24/7.
- I will also post this syllabus on *Moodle*.
- For Readings, please check the Server/Moodle.
- Instructions for assignments and geographic files needed will be on the Server. We are on our way to become 'greener' by using less paper and ink/toner. Please let me know in advance if you prefer a paper copy, in addition to the digital copy.

Communication

- Besides access to course materials and assignments, Moodle offers easy communication between instructor, TA and students.
- I will post announcements for the class, and also send e-mail. Moodle is set up to send e-mail to your official university e-mail address. If you do not regularly read your university e-mail, you could miss out on information.
- To avoid missing out on communications, I recommend that you develop the habit of using your university e-mail or to forward messages from your university e-mail to the account that you use. IT Central can help if needed.
- I like to get to know our students. Labs offer good opportunities for that. I also invite you to come to my office hours to introduce yourself, and ask questions about the course.

Software, Team Work, Planning, etc.

- This is a hands-on, project-oriented course which benefits from team work.
- We will have access to 24 server licenses of TransCad (17 in Stone 218 and 7 in Stone 219. It is advisable to access the server licenses in sequence, not all at once.
- TransCad, a GIS-T (Transportation GIS) developed by the Caliper Corporation, is mainly designed for travel demand modeling as well as routing and logistics problems. The retail value is \$10,000 per single commercial license, and \$2000 per educational copy.
- On the Robinson2016 server is a folder containing the TransCad Demo software. It is fully functional but limited to pre-determined (canned) Caliper data. Additionally, it times out (after 60 minutes or so). You can copy that folder to your memory stick for installation on your own computer.
- Caliper produced several [video tutorials for Maptitude](https://www.caliper.com/maptitude/mapping-software-video-tutorials.htm), a low-cost GIS with an interface similar to TransCad. <https://www.caliper.com/maptitude/mapping-software-video-tutorials.htm>
- Additionally, keep in mind that TransCad is challenging to novice users. The version currently in use (TransCad 8) includes an 'undo' feature, which was requested by previous users. However, 'undo' places greater demands on a computer system and this may challenge networked computers in lab settings.
- (My experience: It really helps to close files after completing a step and re-opening for the next. If the software crashes, it helps to reboot the computer: shut it down completely and start new. It may be a good habit to do so before each lab session, especially once we start working with Missoula data.)

Access to the GRT Lab (218 and 219)

- To access the labs 218 and 219 outside of the class period, please use your Griz Card on the card reader at Stone 219. I will contact our Administrative Associate to activate your Griz Card as a swipe card to access 219. Please let me know if you experience a problem. I will make every effort to keep the door between 218 and 219 open. Please help me with these efforts.
- The door from the hallway to 218 should be closed unless there is an instructor/class in the lab.

Computer LOGIN

To log on to computers,

- you need your NetID and Password. If you have a NetID as a student and as a UM employee, please use the student NetID,

The Server data.cfc.umt.edu

- We will use the server data.cfc.umt.edu, i.e. to access the Missoula street network data (provided by the Missoula Planners.)
- If you are in any Stone Hall computer lab, this server will map automatically and can be found in File Explorer by clicking “This PC” and looking under Network Locations.
- If you must access the server from other computers connected to the campus network, you will need to map the server with the following instructions.
- Using your NetID (with domain Missoula), you can get access to the server by ‘mapping’ to the server. I recommend to map to network drive T (T for transport) or Z. Always connect to the same drive. Please use GPHY486.



\\data.cfc.umt.edu\classes\$ or

\\data.cfc.umt.edu\classes\$\GPHY486

Files on the Server: Read versus Write Access

- Materials needed for lab assignments will be in a folder on the server.
- You can access (read) the data, but cannot write (save) to it.
- Each student in the class will have a folder with read-write privileges. Copy the lab folders (or the materials from the lab folders) to your own directory so you have write access.
- If you read the data from the ‘collective’ lab folder, others may be blocked from accessing it. • When you open a geographic file in TransCad, make sure to ‘**open for exclusive access.**’



- Please note that TransCad is ‘path sensitive.’

Printing:

- With few exceptions, we will avoid printing.
- You can use UMoney on your GrizCard to print to the printer in Stone 219.
- Note that the printer charges for color if **any** amount of color is used in the document (ie color on a URL or email)!
- BW printing is 15 cents per page, color printing is \$1 per page.

Around the Labs

Please Be Considerate of Others:

- Cell phones are disruptive to instructors and fellow students. If you carry a cell phone, please turn it off during the class period.
- It is equally disruptive to arrive late or walk into and out of the class room during the class period. Your cooperation is appreciated in keeping these disruptions to a minimum, unless there are health problems or other special circumstances.

- During the lab periods you may set a cell phone to a quiet signal setting, which alerts you to a call without disrupting others. If you wish, you may step out during the lab period to respond to the call. Do not answer calls in the lab, please.
- If you come to Ston 218 during a period when another class is in session, communicate with the instructor (best in advance) whether it is OK to use an available station. Instructors may or may not give that privilege. Under no circumstance chat with others while another instructor's class/lab is in session

On Food and Beverages: No Food in lab 218 and near computers in 219.

- Please use the Geography lounge for snack breaks between classes.
- Beverages are only allowed in our computer labs if kept in closed containers.
- This is to protect the equipment and to keep both working and eating environments sanitary.

Health Habits

- Let us also keep in mind that this is cold and flu season and that we are working in fairly close quarters. An outbreak of cold or flu would negatively impact this course.
- Please wash your hands thoroughly and frequently and use hand sanitizer. Thank you!

Additional Information:

Academic Honesty/Student Conduct

- All students must practice **academic honesty**. Academic misconduct is subject to an academic penalty by the course instructor and/or disciplinary sanction by the University.
- All students need to be familiar with the **[Student Conduct Code](#)**. The Code is available for review online <https://www.umt.edu/student-affairs/community-standards/default.php>

Disability Accommodation

- The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors, and **[Disability Services for Students](http://www.umt.edu/dss/)** (<http://www.umt.edu/dss/>).
- If you have a disability that adversely affects your academic performance, and you have not already registered with **[Disability Services](#)**, please contact **[Disability Services](#)** in Lommasson Center 154 or call 406.243.2243.
- I will work with you and **[Disability Services](#)** to provide an appropriate modification.
- Please communicate with me in advance, not retroactively.

Important Dates and Deadlines

- Please see **[Spring 2020 Important Dates and Deadlines](#)** calendar (select Spring tab)
- Important Dates on dropping courses:

Deadline	Description	Date
To 15 th instructional day	Students can drop classes on CyberBear with refund & no "W" on Transcript, last day to change to Audit	February 3, @5 PM
16 th to 45 th instructional day	A class drop requires a form with instructor and advisor signature, a \$10 fee from registrar's office, student will receive a 'W' on transcript, no refund.	February 4 – March 24 @5 PM
Deadline	Description	Date

Beginning instructional day 46 th	<u><i>Students are only allowed to drop a class under very limited and unusual circumstances.</i></u> Not doing well in the class, deciding you are concerned about how the class grade might affect your GPA, deciding you did not want to take the class after all, switching majors, and similar reasons are not among those limited and unusual circumstances. If you want to drop the class for these sorts of reasons, make sure you do so by the end of the 45 th instructional day of the semester. Requests to drop must be signed by the instructor, advisor, and Associate Dean (in that order) so if you pursue this request, <i>leave sufficient time to schedule meetings with each of these individuals</i> (generally this will take at least 3-5 working days). A \$10 fee applies if approved. Instructors must indicate whether the individual is Passing or Failing the class at the time of request.	March 25 – May 1 @5 PM
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Basic Needs Security Resources

Any student who has difficulty affording groceries or accessing sufficient food to eat every day, or who lacks a safe and stable place to live, and believes this may affect their performance in the course, is urged to contact the [Office of Student Success] for support.

UM also has a Food Pantry located on the SW side, first floor of the University Center

Curry Health Center Counseling

- Among the services offered by the Curry Health Center (on Eddy Street) are counseling services for students in distress. Curry Health Center Counseling <http://www.umt.edu/curry-healthcenter/Counseling/default.php> (243-4711 - Monday through Friday from 8:00 AM to 5:00 PM or schedule on line through the health portal - www.umt.edu/hportal).
- After hours Crisis Line: 1-800-273-TALK (1-800-273-8255)
- Crisis Text Line: text MT to 741-741
- For crisis after hours you can also contact the Emergency Room at St. Patrick Hospital or Community Medical Center
- See also Curry's Concerned for a Student page <http://www.umt.edu/curry-healthcenter/Counseling/Concern-for-a-Student.php>
- See also Curry's Urgent one-time appointments page <http://www.umt.edu/curry-healthcenter/Counseling/Crisis.php>

Bystander Intervention Training

Students are required to take the Bystander Intervention Training and may have holds on registration if they don't. There is a UM Web page <http://www.umt.edu/student-advocacy-resourcecenter/Bystander%20Training/Bystander-Intervention-Training.php> with dates for training sessions.

Incompletes:

- Please see the Catalog pages for University policies on **Incompletes**. My recommendation: make every effort to avoid an Incomplete!

The Writing and Public Speaking Center

- "The [Writing and Public Speaking Center](#) provides one-on-one tutoring to students at all levels and at any time in the writing process. Visit now. Visit often. We're ready when you are. www.umt.edu/writingcenter."

Career Services

- The **Office of Career Services** assists students in achieving career objectives. Please see the [Career Services](#) website for the range of services <http://www.umt.edu/career/>. Note, for instance, the Big Sky Career Fair in early April.

Internships

- A professional internship can be a useful addition to your formal education.
- Internship experience also adds to your resume.
- Furthermore, an internship can allow you to connect with a potential long-term employer.
- For the UM's [Enrichment-Internship Services](#), please consult the website <http://www.umt.edu/internships>
- Internship opportunities, brought to the attention by current or ex-students to our faculty members, are also publicized via the Geography listserv.
- Previously, students had also good luck in locating and even opening up internship opportunities by directly contacting agencies and employers they would like to work for.
- Professional conduct is critical in assuring success in arranging for and successfully completing internships.

Geography Listserv – Social Media

- The [Geography listserv](#) allows you to gain and share information about up-coming departmental events (from group advising to parties); internship, preceptorship, and job opportunities; and other relevant information (graduation deadlines, course announcements, meeting announcements, etc.) The instructions below are from the [listserv link of our website https://www.cfc.umt.edu/geography/resources/list-serv.php](#)
- To join:
 - Send an e-mail to: GEOGRAPHY-subscribe-request@LISTS.UMT.EDU ○ This must be sent from the e-mail account that you wish to be on the Listserv ○ 2) Leave the subject line blank ○ 3) In the body of the e-mail type this:
 - subscribe your name Geography ○ You will receive an e-mail message confirming your subscription.
- Please use the listserv judiciously. Keep in mind that the REPLY key will go to ALL listserv members, not only the person who sent a previous message.
- There is also a Geography Facebook page
- The Geography Club also has a Face book page to communicate about GeoClub events.

Meetings of Interest

- Graduate Research Conference [GradCon http://www.umt.edu/ces/conferences/gradcon/default.php](#), UM Campus, February 28
- National Conference on Undergraduate Research [NCUR http://www.cur.org/what/events/students/ncur/2020/](#), MUS Bozeman, March 26-28
- AAG [annual meeting https://www2.aag.org/aagannualmeeting/](#), Denver, April 6-10

- MAGIP, [Big SkyGeoCon](https://www.magip.org/BigSkyGeoCon) <https://www.magip.org/BigSkyGeoCon>, Missoula, Holiday Inn Downtown, April 6-10
- UM Conference on Undergraduate Research [UMCUR](http://www.umt.edu/ugresearch/umcur/) <http://www.umt.edu/ugresearch/umcur/>, UM campus, UC Center, April 24

Final Exam Schedule:

- The final exam schedule shows exam periods for Gphy 486 and 489 for Thursday 5-7, 10.10-12.10 and Friday 5-8, 10.10-12.10 (Gphy 486 and 489, respectively).
- We will use these periods for final project presentations. Please mark your calendar for both periods.

REGULAR FINAL EXAM SCHEDULE

Spring 2020 Final Exam Schedule

Hour on which class has met during the semester:	If the class meets daily, 4 times a week, or M, MWR, MWF, MF, MW, MTW, WF, TWF, MR, TW, TWR, WR, W, F or MT, the final exam will be held at this time:	If the class meets TR, T, R, MTR, RF, TRF, R, or TRS, the final exam will be held at this time:	Meeting date for the final exam:
11:00 am	10:10-12:10	8:00-10:00	Monday, May 4
12:00 pm	10:10-12:10	8:00-10:00	Tuesday, May 5
8:00 am	10:10-12:10	8:00-10:00	Wednesday, May 6
9:00 am	10:10-12:10	8:00-10:00	Thursday, May 7
10:00 am	10:10-12:10	8:00-10:00	Friday, May 8
4:00 pm	3:20-5:20	1:10-3:10	Monday, May 4
3:00 pm	3:20-5:20	1:10-3:10	Tuesday, May 5
2:00 pm	3:20-5:20	1:10-3:10	Wednesday, May 6
1:00 pm	3:20-5:20	1:10-3:10	Thursday, May 7